7.H.L.

A

TREATISE

ON THE

PREVENTION OF DISEASES

INCIDENTAL TO

HORSES,

FROM BAD MANAGEMENT IN REGARD TO

STABLES, | WATER,
FOOD, | AIR, AND EXERCISE.

TO WHICH ARE SUBJOINED

OBSERVATIONS

On ſome of the Surgical and Medical Branches
of FARRIERY.

BY J. CLARK,

FARRIER TO HIS MAJESTY FOR SCOTLAND,
HONORARY AND CORRESPONDING MEMBER OF
THE SOCIETY OF AGRICULTURE, &C. AT
ODIAM IN HAMPSHIRE.

——*Servare modum, finemque tenere,*
——*naturamque ſequi.* LUCAN.

1.

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9

TO HIS GRACE

HENRY

DUKE OF BUCCLEUGH.

MY LORD DUKE,

THE very polite manner in which your Grace condeſcended to accept of the Dedication of the enſuing Treatiſe on the Management of Horſes, encourages me to embrace this opportunity of laying the following ſheets at your Grace's feet.

Your Grace is always ready to patroniſe the Arts and Sciences; and, perhaps, there is no Art of equal importance, and that requires more to be cultivated than that of preſerving the health, and curing the diſeaſes of this noble animal.

In hopes that this Treatiſe will in ſome degree contribute to farther Improvements in the Management, and in the Knowledge of the Diſeaſes of Horſes, and that it will meet with your Grace's Patronage and Approbation, I preſume, with the greateſt deference, to ſubſcribe myſelf,

MY LORD DUKE,

Your Grace's much honoured,

Moſt obliged,

And moſt humble ſervant,

JAMES CLARK.

EDINBURGH,
July 1790.

CONTENTS.

CHAP. I.

Page.

Of ſtables—the diſadvantages ariſing to horſes from their being kept in thoſe that are hot—foul-aired—cold—damp—low-roofed—dark—too narrow ſtalls, &c. &c. - - - 19

CHAP. II.

Of food—the qualities of the different kinds of fodder uſed in Britain;—graſs the natural food of horſes—the advantages of the early ſpring graſs—its effects in carrying off chalky concretions in the ſtomach, lungs, liver, &c.—a caſe—qualities of the different kinds of grain—their weight—the method of feeding horſes in different countries—the animal oeconomy in the formation of chyle or nouriſhment—its mixing with the blood—the effects of rich food on lean poor horſes—the proper method of feeding horſes—caſes of overfeeding with grain—horſes ſhould have their ſtated times of faſting as well as of feeding—old hay, its qualities, &c. &c. - - 49

CHAP.

CHAP. III.

Page.

Of water—the main diluter of the food and fluids in general—unwholeſome waters not digeſtible—the probable cauſe of the gravel—an inſtance of *calculi* or ſtone in the bladder of a horſe—horſes do not thrive well on bad water—the qualities of different kinds of water—the method of correcting water that is full of animalcula—the danger of allowing horſes to drink too much water at once, &c. &c. - - 109

CHAP. IV.

Of exerciſe—the neglect of it the cauſe of many diſeaſes in horſes—the conſtant uſe of it, its effects—improper treatment of horſes, after being over-heated by exerciſe, the cauſe of diſeaſes—too violent exerciſe, its effects on fat horſes—and when carried to exceſs—appearances on diſſecting horſes that have died after ſevere exerciſes—plunging horſes, when overheated, in cold water, its effects—perſpiration ſuddenly checked its effects—the cauſe of many diſeaſes - 125

CHAP. V.

Management of horſes when ſick—the danger of keeping them too hot, or breathing a foul air—In certain caſes conſidered—diet for ſick horſes

Page.
horſes—improper treatment of horſes in caſes of gripes or colic pains—in caſes of a ſwelled throat—the danger of forcing food or medicine on them in ſuch caſes - - 165

CHAP. VI.

Of blood-letting—the different inſtruments uſed for this purpoſe—the danger of a ligature or bandage applied round the neck before blooding—the neceſſity of meaſuring the quantity of blood that is taken away—the proper place for making the orifice in the jugular veins—the advantages in curing diſeaſes from blood-letting—appearances of the blood when cold, the uncertainty of—a greater quantity of blood to be drawn away in certain caſes than uſual—quality of the blood—circulation through the body—a deſcription of the arteries—veins—the pulſe of a horſe in health—in diſeaſes—a due attention to the pulſe, the advantages that may be derived from it in the practice of farriery—the caſes which may require blood-letting - 201

CHAP. VII.

Of rowels—the operation deſcribed—their uſe—where they ought to be placed—improper in ſome caſes - - - 237

C H A P. VIII.

Page.

Of ſetons—their uſe—the proper method of introducing them—the form of the needle neceſſary—caſes in cureing tumours on the upper part of the neck, as the *pole-evil* and *withers*—and likewiſe neceſſary to cure deep-ſeated abſceſſes, &c. - - - 243

C H A P. IX.

Of purging—the intention of purging horſes in certain caſes—anatomical deſcription of the ſtomach and alimentary canal—animal oeconomy in the formation of the chyle—improper treatment of horſes during the operation of purging medicines cenſured—humours falling down explained—purging medicines not always neceſſary for preparing horſes that are to run or hunt—the uſe of purging medicines in diſeaſes, &c. &c. - - - - 255

C H A P. X.

Of clyſters—more general uſe of them recommended—nouriſhment may be conveyed into the ſyſtem by clyſters—the compoſition of clyſters ſhould be ſimple—defects of too ſhort clyſter-pipes with ſmall bags—a deſcription of a proper clyſter-pipe and bag—the uſe of ſyringes

Page.
ringes for giving clyſters condemned—forms of clyſters—caſes where clyſters may be given with ſucceſs - - - - 289

CHAP. XI.

Of drinks or drenches—the bad conſequences of having them titled cures for diſeaſes—neceſſity of having them properly compounded—the proper time of adminiſtering them of importance in certain diſeaſes—ſhould be made palatable - - - - 311

CHAP. XII.

Of balls—the conſequences of having them titled cures for diſeaſes—proper method of giving them—cautions concerning the compounding of them - - - - 318

CHAP. XIII.

Of diuretics—their uſe in diſeaſes—preferable to purging medicines in many caſes—the caſes which require diuretic medicines—in what form they may be given. - - - 325

CHAP XIV.

Of giving medicines as preſervatives or preventatives—the cuſtom of giving horſes medicines

Page.

whilſt they are in health cenſured—alteratives, their effects when properly prepared, and preſcribed with judgment—the coarſer kind of antimony ſhould be rejected—ſalts the ſafeſt alterative, eſpecially nitre - - 331

C H A P. XV.

Of moulting or caſting the hair—horſes more ſubject to faintneſs or weakneſs during that ſeaſon than at any other time of the year—manner in which horſes are kept and treated increaſes this weakneſs, &c.—the end of autumn the ſeaſon when horſes may be ſaid to moult—the coldneſs and chillineſs of the weather, at this period, increaſes the diſorders of horſes—evacuations by medicines, &c. hurtful, in many caſes, at this period—this ſeaſon peculiarly ſevere on old horſes—aged horſes ſubject to diſeaſes in the teeth—a caſe—horſes are differently affected during the moulting—their feeding ought to be increaſed at this period—frequent dreſſing or currying horſes of great benefit to them at this time - - - - 339

C H A P. XVI.

Of lameneſs—the cauſes which may produce lameneſs—a complication of them may take

Page.
ringes for giving clyſters condemned—forms of clyſters—caſes where clyſters may be given with ſucceſs - - - - 289

CHAP. XI.

Of drinks or drenches—the bad conſequences of having them titled cures for diſeaſes—neceſſity of having them properly compounded—the proper time of adminiſtering them of importance in certain diſeaſes—ſhould be made palatable - - - - 311

CHAP. XII.

Of balls—the conſequences of having them titled cures for diſeaſes—proper method of giving them—cautions concerning the compounding of them - - - - 318

CHAP. XIII.

Of diuretics—their uſe in diſeaſes—preferable to purging medicines in many caſes—the caſes which require diuretic medicines—in what form they may be given. - - - 325

CHAP XIV.

Of giving medicines as preſervatives or preventatives—the cuſtom of giving horſes medicines

Page.

whilſt they are in health cenſured—alteratives, their effects when properly prepared, and preſcribed with judgment—the coarſer kind of antimony ſhould be rejected—ſalts the ſafeſt alterative, eſpecially nitre - - 331

CHAP. XV.

Of moulting or caſting the hair—horſes more ſubject to faintneſs or weakneſs during that ſeaſon than at any other time of the year—manner in which horſes are kept and treated increaſes this weakneſs, &c.—the end of autumn the ſeaſon when horſes may be ſaid to moult—the coldneſs and chillineſs of the weather, at this period, increaſes the diſorders of horſes—evacuations by medicines, &c. hurtful, in many caſes, at this period—this ſeaſon peculiarly ſevere on old horſes—aged horſes ſubject to diſeaſes in the teeth—a caſe—horſes are differently affected during the moulting—their feeding ought to be increaſed at this period—frequent dreſſing or currying horſes of great benefit to them at this time - - - - 339

CHAP. XVI.

Of lameneſs—the cauſes which may produce lameneſs—a complication of them may take

Page.

place in the ſame limb, and at the ſame time—ſhoulder-ſlip, remark on—bony excreſcences, on the ſhoulder or leg-bones, frequently the cauſe of lameneſs, &c. &c.—the difficulty of diſcovering the true ſeat or cauſe of a horſe's lameneſs in many caſes—caution recommended to practitioners in ſuch caſes—ill-fitted ſaddles frequently cauſe lameneſs - - - 361

CHAP. XVII.

Of beating or ill-treating horſes—the effects it produces on horſes in rendering them vicious—gentle uſage preferable to force or chaſtiſement—the practice of the Arabians recommended—horſes have their peculiarities of temper as well as the human ſpecies—ill-uſage in breaking, &c. the cauſe of horſes ſcaring or bogling at objects they meet on the road—the ſenſe of hearing very acute in horſes—an advice to bad riders—chaſtiſing horſes on their tripping or ſtumbling, its effects on them—the different cauſes that may occaſion horſes ſtumbling, &c. - - - - 385

CHAP. XVIII.

Of trimming horſes ears—the bad effects it produces on them in many caſes—cropping their ears too ſhort produces the ſame effects 397

C H A P. XIX.

Page.

Of friction or dreſſing horſes—the effects it produces on the circulating fluids—promotes the natural ſecretions—the advantages of it when horſes turn cold and chilly after exerciſe—to be avoided in the legs in caſes of ſome diſeaſes—waſhing horſes bodies with cold water when overheated, in order to clean them, remark on 403

C H A P. XX.

Of the management of horſes when travelling—neceſſary preliminaries conſidered before taking a journey on horſeback—on watering, feeding, and dreſſing horſes on a journey—remarks on ſteel points for the ſhoes when the roads are covered with ice - - - 413

Page.

place in the ſame limb, and at the ſame time—ſhoulder-ſlip, remark on—bony excreſcences, on the ſhoulder or leg-bones, frequently the cauſe of lameneſs, &c. &c.—the difficulty of diſcovering the true ſeat or cauſe of a horſe's lameneſs in many caſes—caution recommended to practitioners in ſuch caſes—ill-fitted ſaddles frequently cauſe lameneſs - - - 361

CHAP. XVII.

Of beating or ill-treating horſes—the effects it produces on horſes in rendering them vicious—gentle uſage preferable to force or chaſtiſement—the practice of the Arabians recommended—horſes have their peculiarities of temper as well as the human ſpecies—ill-uſage in breaking, &c. the cauſe of horſes ſcaring or bogling at objects they meet on the road—the ſenſe of hearing very acute in horſes—an advice to bad riders—chaſtiſing horſes on their tripping or ſtumbling, its effects on them—the different cauſes that may occaſion horſes ſtumbling, &c. - - - - 385

CHAP. XVIII.

Of trimming horſes ears—the bad effects it produces on them in many caſes—cropping their ears too ſhort produces the ſame effects 397

CHAP.

CHAP. XIX.

Page.

Of friction or dreſſing horſes—the effects it produces on the circulating fluids—promotes the natural ſecretions—the advantages of it when horſes turn cold and chilly after exerciſe—to be avoided in the legs in caſes of ſome diſeaſes—waſhing horſes bodies with cold water when overheated, in order to clean them, remark on 403

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Of the management of horſes when travelling—neceſſary preliminaries conſidered before taking a journey on horſeback—on watering, feeding, and dreſſing horſes on a journey—remarks on ſteel points for the ſhoes when the roads are covered with ice - - - 413

PREFACE.

IN Proſecuting the plan which I formerly propoſed, in the Introduction to my Obſervations upon the Shoeing of Horſes, and the Diſeaſes of their Feet, which was, to communicate my obſervations on the diſeaſes of horſes, I found that a number of repetitions and digreſſions would occur ſo frequently upon the proper management of horſes, in a variety of reſpects, and which could not be avoided, without a manifeſt injury to the work. In order to avoid this inconvenience, and to render the plan more complete and intelligible, I concluded, that it would be of more utility to write a ſeparate Treatiſe on the Management of Horſes in general, in which I have endeavoured to point out the Cauſes of Diſeaſes, and particularly of the acute kind, which generally prove moſt deſtructive to horſes. As immediately connected with the ſubject, I have ſubjoined ſome obſervations on the Medical and Surgical Branches of Farriery, becauſe they are abſolutely neceſſary to be underſtood by the young practitioner, before he enters upon the ſtudy of the diſeaſes of horſes. It is not my intention to compile a Syſtem of Farriery, but only to make ſuch remarks and obſervations upon the moſt practical branches of this uſeful art, as may contribute towards its improvement.

I am but too ſenſible of the many diſadvantages, in the preſent mode of a Farrier's education, the young practitioner labours under, and the difficulties he has to ſurmount, before he can attain, even in theory, a tolerable knowledge of the leading principles of this art. For that of Anatomy, the Materia Medica, and the Practice of Phyſic, ſo far as may be neceſſary for horſes, ought to be laid open to young Farriers, in a regular and ſcientific manner, by Profeſſors in different parts of the kingdom. At preſent, all the opportunities the young practitioner can have, for improving himſelf in theſe branches, are only from reading; and reading alone is not ſufficient to qualify a man either for the profeſſion of a Phyſician or a Farrier. It requires all the aſſiſtance that can poſſibly be derived from theory, from demonſtration, from practice, and experience, to render a man in any degree properly qualified for the profeſſion of a Farrier. But, whilſt this neceſſary piece of education is neglected, and totally overlooked, the Farrier's art muſt forever remain in darkneſs and obſcurity. The ſubject is of importance; and it is ſurpriſing, that, whilſt the arts and ſciences are cultivated in a high degree, this uſeful art ſhould be ſo entirely neglected, more eſpecially in Britain, which, at the ſame time, is poſſeſſed of the fineſt horſes perhaps in the world.

The laudable attempts that have been made by different authors, who have written on the ſubject of Farriery, can only be attended with a partial improvement, while a regular mode of education is not to be attained on any terms, at leaſt in this country. In France, a regular Academy for the inſtruction of young Farriers has been inſtituted. The attempt is laudable, and worthy of imitation. The Phyſician and Surgeon enjoy the greateſt opportunities for receiving inſtruction in their profeſſions, by a regular education, under able Maſters, in the different branches of Anatomy, Phyſic, and Surgery; and, as the analogy between the diſeaſes of the human body, and thoſe to which a horſe is liable, is very great, it muſt be obvious, that the cure of thoſe diſeaſes which affect the latter muſt depend upon the ſame principles as that of the former: From which it is likewiſe evident, that a regular education, in the branches above mentioned, is as neceſſary to a Farrier.

In handling the following ſubjects, I have not extended them all the length they might have been carried; confining myſelf chiefly to the practical branches, and carefully ſhunning whatever might tend to perplex the reader, by avoiding technical terms as much as poſſible, and, at the ſame time, ſtudying the utmoſt brevity the ſubjects would admit of.

The very favourable reception which my former Treatiſe on the Shoeing of Horſes, and on the Diſeaſes of their Feet, met with from the Public, together with the rapid ſale of the firſt impreſſion of this Book, encourages me to proceed in proſecuting the Plan I have propoſed. In hopes of the ſame kind indulgence, I now ſubmit the ſecond impreſſion of the following ſheets to the candour of the Public, and earneſtly wiſh it may tend to the improvement of that Art on which it treats.

INTRO-

INTRODUCTION.

———To hold the golden mean,
To keep the end in view, and follow Nature.

THE propriety of this excellent maxim is, perhaps, in few caſes more applicable than in the following ſubject, relating to the Management of Horſes. Every judicious obſerver muſt have had an opportunity of ſeeing the many abſurdities daily committed in the treatment and management of this animal, in a great variety of caſes, and, at the ſame time, of obſerving the bad conſequences that follow from it; and perhaps there is no ſubject of equal importance, in which people are more apt to be led by prejudice in favour of certain eſtabliſhed modes and cuſtoms. But a prejudice in favour of popular cuſtoms, however plauſible they may appear, when adopted without any inquiry into their propriety and uſefulneſs, farther than the ſanction of the vulgar, can ſeldom ſtand the teſt of philoſophical inquiry.

It is to be regretted with what obſtinacy many ridiculous abſurdities are perſevered in, relating to horſes, in oppoſition to experience, and to common ſenſe, which nothing can ever baniſh from ſtables, but the interpoſition of thoſe whoſe real intereſt it will be, and who ſhould aſſume the right they have to think for themſelves, without being dictated to by thoſe they ſhould command.

The many advantages we derive from horſes, their real and ſolid ſervices, render them valuable; and every thing which tends to improvement in the management of them, or in preventing thoſe diſeaſes they are ſubject to, (by error in management,) are objects worthy of attention.

Horſes, in their natural ſtate, or running at graſs in the fields, do not require much attention from man. If they have ſufficient paſture and water, they eat, drink, and run about at pleaſure. Their wants are few, and eaſily ſupplied; and they enjoy a perfect ſtate of health. But, in a domeſticated ſtate, from a variety of circumſtances, their conſtitutions undergo a conſiderable change. They require particular care and attention in the management of them. To be ſheltered from the weather, and to be fed with rich food, to enable them to perform with vigour the various labours impoſed on them, and which too frequently are exacted with rigour and ſeverity, beyond what they are well able to bear. Hence the unnatural reſtraint, the confinement in too cloſe foul-aired ſtables, together with the violent exerciſes they are expoſed to, and the injudicious management of them in a variety of reſpects, render them liable to a long train of diſeaſes, which ſooner or later either proves fatal to them, or lays the foundation of ſome chronic diſorder, which art can neither palliate nor remove.

The Britiſh horſes are juſtly eſteemed the fineſt in the world; and, what is very remarkable, it is the fineſt and beſt of theſe horſes that too frequently are moſt expoſed to be hurt from an injudicious method of treating them. Whilſt thoſe of an inferior quality, being left more to themſelves, or, in other words, are allowed to live more agreeable to their nature, and free from thoſe eſtabliſhed practices obſerved in the more elegant ſtables, perform the taſk required of them to a good old age in health and ſoundneſs; a mode of refinement, if it may be ſo called, prevails in the ſtables where fine horſes are kept, every thing reſpecting the management of them is carried almoſt to an extreme, inſomuch that there is hardly any medium obſerved. Thus, a certain degree of warmth is agreeable, and even neceſſary, to horſes, yet they generally are kept too hot, at the ſame time frequently loaded with body-cloths. Food, which ought to be diſtributed according to their work or exerciſe, is frequently dealt with too liberal a hand; whether they work or not, the food is always continued the ſame, without conſidering whether the waſte in the conſtitution requires a greater or a leſſer ſupply of nouriſhment. Exerciſe, that neceſſary article for preſerving them in health, and fitting them for the active exerciſes required, is too frequently neglected. Freſh air, that exhilarating principle of life, which is ſo eſſentially neceſſary for the health of all animals, is but too much excluded from their ſtables. But that I may not anticipate my ſubject, I ſhall only obſerve, that the health and ſoundneſs of horſes depend greatly on the manner in which they are treated; and it ought always to be obſerved, as a general maxim, that the nearer we approach in the management of horſes, to that which is moſt agreeable to their nature, they will be in the greater perfection; and the farther we deviate from this rule, we lay a reſtraint upon them, and injure their conſtitutions.

In proſecuting this ſubject, my deſign is not to advance or ſupport any extravagant hypotheſis reſpecting medical theories, or to recommend inſignificant noſtrums, as infallible remedies for this or that diſeaſe or lameneſs; but to make ſome general remarks and obſervations upon the common methods at preſent in uſe in the management of horſes, and to ſhow the bad effects which may ariſe from any exceſs, neglect, or ill conduct, obſerved in the management of them in theſe articles. At the ſame time, I ſhall point out the means by which many diſeaſes and lameneſs may, in a great meaſure, be prevented.

This may be conſidered, at firſt view, as preſuming too much; but it is ſurely of greater importance to endeavour to prevent diſeaſes and lameneſs in horſes, eſpecially when it is practicable, by proper care and attention in the managing of them, than by an oppoſite conduct, to run the riſk of their health and ſoundneſs, and afterwards have recourſe to precarious and uncertain cures; for many diſeaſes and lameneſs in horſes might, without all doubt, be prevented, by proper care and attention, which, when once they have taken place, cannot ſo eaſily be removed. Slight cauſes, when neglected, often produce the moſt violent complaints, which art, in many caſes, can only palliate; and it ought always to be remembered, that unleſs horſes are in health, and thoroughly ſound, they are not fit for the laborious exerciſes required of them.

This ſubject has already, in ſome degree, been treated by authors who have written on the diſeaſes of horſes. The Right Honourable the Earl of Pembroke, at the end of his Military Equitation, has likewiſe, with great propriety and judgement, given ſome remarks on the treatment of military horſes, which, in many reſpects, are applicable to horſes in general. Had his Lordſhip extended his plan, this, or any publication on that particular branch, would perhaps have been ſuperfluous: As this, however, has not been done, there is ſtill a large field for improvement, I apprehend it may be proper to proſecute this branch of uſeful knowledge, as it is of importance, and neceſſary to be attended to by every one who wiſhes to have his horſe in health, ſtrength, and fit for action; and, at the ſame time, is deſirous of acquiring ſome inſight into the moſt prevailing cauſes of the diſeaſes to which horſes are liable. It will alſo ſerve as a neceſſary preliminary to a ſubſequent publication on the diſeaſes of that noble animal.

In order to render the ſubject more eaſily underſtood, I ſhall endeavour to avoid all prolix and abſtract reaſoning, and found my arguments chiefly upon the analogy which ſubſiſts between the human body and that of a horſe; at the ſame time I ſhall avail myſelf of facts taken from different authors on the ſubject, and from my own obſervation and long experience in the management of horſes.

Health is the faculty of performing all the functions of animal life in the moſt proper and perfect manner; that is, when reſpiration or breathing is performed in a free, eaſy, regular manner; when a horſe can bear exerciſe or labour, without becoming ſhort-breathed, faint, or appear too much fatigued, in proportion to the labour or exerciſe he has undergone; when he eats and drinks moderately, with a good appetite, and appears refreſhed by it; when his hair lies ſmooth and ſhining; when the excretions of dung, urine, &c.

are diſcharged in a due proportion and conſiſtency; and when a horſe appears lively, active, and full of ſpirit.

In order to preſerve horſes in this healthful ſtate, it is not neceſſary to have recourſe to medicine or blooding, &c. &c. by way of preventing diſeaſes, or preſerving them in health. The moſt effectual means to attain this end, are a proper attention to the management of them in general, which partly conſiſts in accommodating them with well aired ſtables, with wide ſtalls, and allowing them wholeſome and nouriſhing food and drink, in proportion to the labour required of them; together with well-timed exerciſe, when they are not otherwiſe employed; to which may be added, good rubbing and dreſſing, twice or thrice every day. There are likewiſe ſeveral other conſiderations relating to the management of horſes, under a variety of circumſtances, which are neceſſary to be attended to. It will therefore

fore be proper to conſider each of theſe ſeparately under their different heads, at the ſame time to ſhow wherein the errors in the management of horſes at preſent lie, and to point out the proper means by which they may be preſerved in a healthful active ſtate.

OBSERVATIONS
ON THE
MANAGEMENT OF HORSES.

CHAP. I.

OF STABLES.

YOUNG horſes generally are accuſtomed to live and breathe in a pure open air till they come of age, and are fit for labour ; it is then found convenient to houſe them. This produces a conſiderable change in their bodies, and makes them liable to be greatly affected by the temperature of the air which ſurrounds them, and in which they breathe.

That the generality of ſtables are kept too cloſe and hot, requires no demonſtration, as every one who goes into them (even when the weather is pretty cool) muſt have diſcovered this from their own feelings; and, in the ſummer ſeaſon, the heat within them is increaſed to a very great degree. What renders it ſtill worſe, it frequently happens, that from the ſituation and ſtructure of many ſtables, no opening can be made to allow a ſufficient quantity of freſh air ſo as to enable horſes confined in them to breathe with any tolerable degree of freedom. The door is the only entrance for air, and that can only happen occaſionally when it is open. It is true, the intercourſe that muſt unavoidably take place through the day in going out and in, renders ſuch ſtables tolerably freſh aired; yet in the mornings, when the door has been ſhut up for ſome hours through the night, and eſpecially in ſummer, the heat is intolerable, and the air ſo foul, that a man can hardly breathe in it, whilſt, at the ſame time, the ſharpneſs of the ſalts, ariſing from the horſe's urine, &c. attacks his noſe and eyes, and occaſions a copious diſcharge of tears.

Many of the hovels at preſent uſed as ſtables do not even deſerve the name ; and it is ſurpriſing that, conſidering the value and uſefulneſs of horſes, ſo little attention is paid to their health in this reſpect : For ſurely there can be nothing more hurtful than keeping a number of them (perhaps 30 or 40) ſhut up in a cloſe warm ſtable, where they muſt conſtantly breathe a hot foul-air, which, at the ſame time, is ſtrongly impregnated with the putrid ſteams of their own dung, wind, and urine, beſide the exhalations that ariſe from their bodies, which, in this caſe, are kept in a conſtant ſtrong perſpiration, by the great heat of the air which ſurrounds them ; and, to add to all this, they are perhaps wrapped tight up in body-cloths. How can it be expected that a horſe, who has paſſed the night in this ſituation, ſhould be active and vigorous to perform his day's work ? Will he not rather be faint, languid, and dull, his whole ſyſtem as it were being unhinged, and in a relaxed ſtate. Let any man, who is an advocate for this treatment of horſes, try the experiment on himſelf; let him ſleep in a heated cloſe room, covered up with cloaths, ſweat it out for the night, and try the condition he will be in next day for any employment whatever.

Although the deſcription I have given of the ſituation of horſes in large cloſe ſtables through the night, may appear exaggerated to thoſe who have not had an opportunity of knowing it from their own obſervation, it is, however, a true one; and the ſame obſervation will hold with reſpect to thoſe ſtables that are of ſmaller dimenſions, even although they ſhould contain fewer horſes. If, at the ſame time, the ſtable is made ſo cloſe as to exclude the admiſſion of freſh air, it is well known to be a common practice to ſhut up every crevice that would admit the leaſt quantity of air. The very threſhold of the door is choaked up with dung; and even the key-hole is filled up with ſtraw.

Every man knows, from his own experience, that, when a number of people are met together in a cloſe room, the air within it becomes moiſt and hot, which renders breathing difficult; and, if continued in for a length of time, this uneaſy ſenſation would be increaſed. In churches, or crowded aſſemblies lighted with candles, the effects of a heated foul air is evident to the ſight from the lights burning dim and very faintly; and although the loftineſs of the roofs in ſuch places contributes to render it leſs perceptible to thoſe who are on the lower or ground floor, (as the heated foul air always aſcends); yet, to ſuch people as are in the higher parts or galleries, the oppreſſion it occaſions in breathing is great, the perſpiration becomes profuſe, and their thirſt exceſſive. The bad effects of breathing long in a heated foul-air is but too well known, and will be remembered by every one who has heard of the unfortunate affair of Calcutta black hole.

The lowneſs of the generality of ſtable roofs renders them unwholeſome from this circumſtance alone; the horſes heads being too near the ſtable roof, are under the neceſſity of breathing a heated foul-air almoſt conſtantly. During the time they are confined in the ſtable, eſpecially through the night, when the doors, &c. are ſhut up, it is ſtill worſe in the warm months of ſummer. A heated foul air is noxious to animal life in general. How then can it be expected that horſes ſhould thrive in it? At the ſame time, can there be any thing more inconſiſtent than keeping horſes warm to an exceſs in the houſe by the uſe of body cloths, in a conſtant ſtate of ſtrong perſpiration, and ſtripping them naked the moment they are to go abroad in all weathers? The conſtitution of a horſe, ſtrong as it is, cannot withſtand ſuch irregularities: It muſt, and indeed does, too often fall a ſacrifice to this manner of treatment. The ſudden and frequent tranſitions which horſes undergo, almoſt every day, from being ſurrounded with, and breathing, a hot foul air through the night, and ſuddenly expoſed to a ſharp piercing cold air, and, *vice verſa*, from a cold to a hot, were there no other cauſes, are ſufficient of themſelves to produce a number of the moſt violent diſeaſes. It is to be obſerved, that great heat and profuſe perſpiration diſſipates the watery parts of the blood, and renders it too thick for circulation; and from that cauſe alone many diſeaſes proceed. The conſtant inſpiring of a hot foul air does not expand the lungs ſufficiently, ſo as to promote the circulation of the blood through them; hence it is accumulated, and proves another ſource of diſeaſes in that organ. It likewiſe renders them liable to fevers, faintneſs, languor, frequent ſickneſs, and loſs of appetite. It expoſes them to all thoſe external complaints which ariſe from obſtructed perſpiration, as rheumatiſm, tumors in the glands, ſcabs, lumps, ſcales on the ſkin, ſtareing of the hair, &c. But the danger is ſtill greater when the perſpirable matter that ſhould be carried off in the ordinary courſe is thrown upon ſome of the internal viſcera, as the lungs, inteſtines, brain, pleura, &c. From the firſt of theſe proceed coughs, peripneumony, or inflammations of the lungs, conſumptions, &c. From an affection of the inteſtines proceed obſtructions in the bowels, and diarrhoea, or *ſcouring*, as it is called in horſes. When it ſettles on the brain, it produces vertigo, or ſtaggers, apoplexy, epilepſy, &c. And, when on the pleura, it is attended with the moſt acute pains or ſtitches; ſymptoms which nearly reſemble thoſe of the gripes or cholic. Theſe complaints, if not ſpeedily relieved, generally prove fatal to horſes.

Together with the heated foul air which generally prevails in ſuch ſtables as are kept too hot and cloſe, there is always a dampneſs or moiſture. This is occaſioned by their being made too cloſe, and kept ſo; inſomuch that no freſh air can be admitted into them, but what paſſes in at the ſtable door, and that only, as I have already obſerved, when it is occaſionally open. Hence the moiſture from the horſes breath (and which may be increaſed from a low or damp ſituation) gathers, or is collected, in large drops on the roof, walls, and glaſs windows, and runs down in ſmall ſtreams. At the ſame time, the ſtable is filled with a hot, damp, and moiſt air, which is not only extremely pernicious to horſes health, but deſtructive to their furniture of every kind. Foul air, whether from putrid ſteams, or exhalations of any kind, is noxious to all animals, and productive of various diſeaſes which frequently prove fatal.

It would be needleſs to enter here into an inquiry concerning the properties of air, as every one, from his own experience, muſt have obſerved, at ſome time or other, the great difference ariſing from his breathing in a foul or in a freſh air; it will be ſufficient to obſerve, that air is the chief inſtrument of health, and principle of life, without which no animal can ſubſiſt. It is likewiſe neceſſary to obſerve, that there is a peculiar matter thrown from the lungs of every animal, together with the air, which renders it unfit for reſpiration or breathing. Beſides, particular ſituations and ſeaſons often alter the qualities of the air, and render it more or leſs unfavourable to animal life. Nature, accordingly, makes uſe of all poſſible ways to preſerve the air in a wholeſome ſtate; for it is thinned and purified by heat, and kept in continual motion by the winds.

Although the air is by ſuch means often preſerved in a wholeſome ſtate, yet, as has been before obſerved, particular ſituations and ſeaſons often alter its qualities, ſo as to render it more or leſs hurtful. Its dryneſs produces one ſet of diſeaſes, its moiſture another; its heat or its cold others; and ſo on. It is well known, that no animal can exiſt long in the ſame individual quantity of air.

Thus, it is computed that a gallon of air is rendered unfit for reſpiration by the ſteams of a man's breath in one minute; conſequently, a hogſhead of air would not ſupply a human creature one hour; nor, indeed, can he live in it one third of that time. Hence, therefore, we may learn, that, without a continual ſupply of freſh air, the lungs cannot perform their office. This will appear ſtill more neceſſary, when it is conſidered that the lungs are ſuppoſed to be the chief inſtrument of ſanguification, and mixing the blood and chyle by their expanſion and dilatation, &c.

Dr Hales, to whom the world is much indebted for his curious and uſeful experiments on air, tells us, that he could not live half a minute without uneaſineſs in ſeventy-four cubical inches of air, and not one minute in the ſame quantity, without danger of ſuffocation.

If the quantity of air above mentioned is rendered unfit for reſpiration by a man's breathing in it for ſo ſhort a time, we may conclude that a much greater quantity of air would be rendered unfit for reſpiration in the ſame time by a horſe, whoſe lungs are conſiderably larger, and of a more extenſive ſurface.

The effluvia from animal bodies are likewiſe very hurtful to the air. Three thouſand men, living within the compaſs of one acre of ground, would make an atmoſphere of their own ſteams ſeventy feet high, which would ſoon become peſtilential, if it were not diſperſed by the winds. The air of priſons, for this reaſon, produces mortal fevers, &c.

Moiſt air relaxes all animal fibres. Such diſeaſes, therefore, as proceed from laxity of fibres, muſt be the common diſeaſes, both of moiſt ſeaſons and moiſt ſituations. Dry air, by producing oppoſite effects, produces oppoſite diſeaſes.

Cold air, by bracing the fibres, and giving them a ſtimulus, produces that ſtrength and activity of which we are ſo ſenſible in froſty weather. Hot air, likewiſe, relaxes the fibres, ſo as to occaſion that faintneſs and debility ſo often experienced in hot weather.

Thoſe ſtables which contain a great number of horſes are attended with other diſadvantages, beſide thoſe I have already mentioned, eſpecially to tired or fatigued horſes, from the great intercourſe which muſt unavoidably happen in people going out and in, eſpecially in public ſtables. Hence thoſe horſes that are ſhy to lie down, or are eaſily diſturbed, will not reſt themſelves in that horizontal poſture, which is of great conſequence for keeping their legs fine and clean, as it forwards the circulation of the blood, &c. in the veſſels, and prevents ſwelling and gourdineſs of the legs and heels, which are generally the forerunners of ulcers, ſcabs, greeſe, &c. Reſt, to horſes that are tired and fatigued, becomes abſolutely neceſſary, in order to recruit and refreſh nature. We know how agreeable and neceſſary it is to ourſelves. Horſes are ſuſceptible of the ſame ſenſations: Therefore, every opportunity of reſting and ſtretching their legs ſhould be given them.

Large crouded ſtables contribute greatly to communicate contagious or infectious diſeaſes. A great number of horſes breathing in one place contaminates the air; and, if it has not a free current, it ſoon becomes unwholeſome, and, like the air of jails, it contracts a malignant quality, which produces fevers in thoſe horſes who ſtand in them; and, on changing them to other ſtables, they likewiſe communicate the infection to others. Hence it has been remarked, in thoſe epidemical diſeaſes amongſt horſes which have appeared in Britain, that it raged with moſt violence in thoſe ſtables where a great number of horſes were confined together in one large ſtable, whilſt its effects, in ſmall well aired ſtables, was more mild and leſs deſtructive.

To enumerate all the diſadvantages which ariſe to horſes, from their being kept too warm, and breathing a hot foul moiſt air in cloſe ſtables, would take up too much of the reader's time, or perhaps weary his patience, as the impropriety of this treatment to horſes muſt be obvious to every one who allows himſelf to reflect coolly upon the ſubject, and to apply theſe reflections to what he has experienced from his own feelings in the like ſituations. I ſhall therefore only add further, that it renders horſes exceedingly delicate: It enervates their whole ſyſtem, and, of courſe, renders them unfit for the laborious exerciſes required of them.

On the other hand, too cold ſtables are likewiſe hurtful to horſes, more eſpecially after labour or exerciſe, or when they are kept ſtanding fixed to one place, or where the cold air is directed upon them in a current or ſtream from any door or window. A current of cold air is more noxious to animals that ſtand in it but for a ſhort time, than heat. The natural qualities of the former is one of the principal cauſes of the diſtempers it produces; for its coldneſs checks perſpiration, by contracting the ſkin, and cloſing or ſhutting up the pores.

It is a common ſaying among ſtable-people, that horſes feed beſt when kept in darkneſs. But this is by no means the caſe. They feed equally well in light, are fond of it, and ſhow evident ſymptoms of pleaſure when they are brought from a dark ſtable into the light, by their friſking, &c. Such ſtables are generally unwholeſome; for, as they have no windows, freſh air is excluded as well as light.

Very dark ſtables are likewiſe hurtful to the eyes. Horſes are naturally timorous, more eſpecially when they ſee but imperfectly around them. Hence they are the more conſtantly upon their guard. By this means the pupils of the eyes are too much dilated, or opened, in ſearch of the leaſt ray of light, in order to diſcover objects near them. This conſtant dilatation of the pupils greatly weakens their contractile power; and, when the horſe is brought out to the open day, the rays of light fall ſo ſuddenly, and ſo ſtrong, upon his eyes, as to cauſe a kind of quivering or convulſive motion in them, and in the eye-lids; the immediate efforts of the poor animal to keep out thoſe rays of light which give him ſo much pain, and that, at other times, is ſo very agreeable to him. But this is not the only bad effect that ariſes to horſes from their ſtanding in dark ſtables. It affects their ſeeing objects diſtinctly when abroad, and cauſes them to ſtartle, and be alarmed at every thing they meet with, which makes them exceedingly troubleſome to the riders. The poor animals are blamed, when, in fact, it is in a great meaſure owing to the diſmal ſituation in which they are too conſtantly kept. Light, to horſes, is as cheering, agreeable, and natural, as it is to the human ſpecies; therefore, they ought not to be denied that common privilege.

Farmers, from a view of making dung, lay great quantities of ſtraw under their horſes, where they ſometimes let it remain for weeks together. The dung, urine, together with the heat of the ſtable, ſoon reduce it to a ſtate of putrefaction, from which iſſue ſteams of a moſt noxious quality, which the horſes conſtantly breathe in; and, in wet weather, when they are more confined to the ſtable, this hot foul air may occaſion fevers of the moſt malignant kind; and, perhaps, this may be the cauſe of thoſe epidemical fevers which break out in rainy ſeaſons.

In my Obſervations upon the Shoeing of Horſes, and the Diſeaſes of their Feet, I have frequently hinted at the bad effects of keeping their hoofs and legs too hot, by means of too great a quantity of litter at all times, night and day, and perhaps large quantities of heated dung. The great heat of the ſtable, together with the accumulated heat ariſing from too great a quantity of litter about the legs, occaſion a more than ordinary derivation of blood to the legs, &c. which cauſes a dilatation, or fullneſs of the blood-veſſels, and, of courſe, a ſwelling or gourdineſs in the legs. Hence proceed a ſtiffneſs and numbneſs, greaſy heels, &c. If the horſe lies down for relief, the great heat of the litter ſoon forces him to get up again; and, after repeatedly lying down, and being forced to get up immediately, from the above cauſe, he attempts it no farther, but ſtands upright, or perhaps a little ſtradling, often ſhifting the weight of his body from one leg to another. This erect poſition, in which he is obliged to ſtand, increaſes the ſwelling of his legs, &c. Recourſe is then had to all the remedies commonly preſcribed for ſwelled heels, under the notion of carrying off humours, as bleeding, rowels, purging, diuretics, &c. &c.

I have been the more particular in the above deſcription, as many caſes have occurred,

curred, ariſing from the above cauſe, when no diſeaſe did at firſt actually exiſt, and which might have eaſily been prevented, by removing the quantity of litter as ſoon as the horſe's legs began to ſwell, keeping them cool, and waſhing them frequently with cold water.

The Earl of Pembroke, in his Military Equitation, has a very judicious remark on this head. " After working, (ſays he), and " at night of courſe, as alſo in lameneſſes, " and ſickneſſes, it is good for horſes to " ſtand on litter; it alſo promotes ſtaleing, " &c. At other times, it is a bad cuſtom; " the conſtant uſe of it heats and makes " the feet tender, and cauſes ſwelled legs. " Moreover, it renders the animal deli- " cate. Swelled legs may frequently be " reduced to their proper natural ſize, by " taking away the litter only, which, in " ſome ſtables, where ignorant grooms and " farriers govern, would be a great ſaving " of phyſic and bleeding, beſides ſtraw. I " have ſeen, by repeated experiments, legs

" ſwell and unſwell, by leaving litter, or " taking it away, like mercury in a weather-glaſs."

The Arabians *, who are remarkably careful in the management of their horſes, and have them in the greateſt perfection, litter them with their own dung, dried in the ſun, and afterwards beat down to a powder, and ſpread thinly upon the floor, about four or five inches thick; and, after being ſoiled, it is dried a ſecond time in the ſun, which clears it entirely of its offenſive odour; and, in order to keep their legs cool, waſh them carefully with cold water morning and evening. This practice has not only the deſired effect on the legs, but it keeps their hoofs cool and moiſt in that dry and warm climate.

The ſame author likewiſe tells us, that the Arabians keep their horſes, as much as poſſible, in the open air. " Every day, " (ſays he), from morning to night, all the " Ara-

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* Buffon's Natural Hiſtory of the Horſe.

" Arabian horſes ſtand ſaddled at the tent
" doors; and, as the Arabians live in tents,
" theſe tents ſerve them likewiſe for
" ſtables."

This method of managing horſes approaches, as near as it is poſſible, to the natural or wild ſtate, and cannot fail of being attended with ſalutary effects to the conſtitution of this uſeful animal: And, although this practice cannot be adopted or recommended in our cold and changeable climate, yet the inference is very obvious, and cannot fail of ſhewing the propriety and uſefulneſs of keeping our horſes in well aired ventilated ſtables.

The above author likewiſe obſerves *,
" That very warm climates, it would ap-
" pear, are deſtructive to horſes; and,
" when they are tranſported from a mild
" climate to a very warm one, the ſpecies
" degenerate." This obſervation, together with the arguments produced in ſupport of it, and which appear to be founded in fact, ſhows

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* Page 373.

ſhows how pernicious and unnatural too hot ſtables are to the conſtitutions of horſes. Stables, with double heads, as they are called, that is, when the horſes ſtand with their tails oppoſite to one another, are very improper, unleſs there is a conſiderable open ſpace behind them, as horſes are apt to kick and fight, by which they lame and wound one another; inſtances of which occur almoſt every day: A precaution of this kind is the more neceſſary, as many, if not moſt horſes, when not feeding, ſtand as far back as the ſtalk of their collar will admit. This practice I have obſerved to prevail moſtly in thoſe ſtables that were kept too hot, probably owing to a foul hot air prevailing near the rack and manger, or from putrid ſteams ariſing from old muſty litter below the manger, or from that under the horſes fore feet; for it is to be obſerved, that horſes and geldings, when they ſtale, throw their urine conſiderably forward, and if the wet litter is allowed to remain under them, (which indeed is too frequently the caſe), it heats like a dunghill. The ſaline ſteams ariſing from it are ſo ſharp and diſagreeable to the organs of ſmelling, that horſes ſtand as far back as they can, in order to avoid the ſmell, and to breathe a freer and freſher air.

From what has been ſaid, it is obvious, that the prevailing cuſtom of keeping horſes too warm in their ſtables, and where, at the ſame time, a hot foul air muſt of courſe prevail, cannot fail of being attended with bad conſequences to their health, &c. and ſhows the neceſſity of accommodating them properly with well aired ſtables, free from all damp or foul air, and ſo contrived as to be kept at all ſeaſons of a proper temperature, avoiding the extremes of heat and cold.

It is well known, that in hot-houſes, where exotic and other delicate plants are kept, a thermometer is uſed to aſcertain the heat of the air within the houſe, which becomes abſolutely neceſſary, as any exceſs of heat or cold would injure the plants. This practice, with great propriety, might be adopted in ſtables, that, when the heat within them is increaſed to a certain degree, the ventilators ſhould then be opened; and when too cold, they may be ſhut, or nearly ſo, as may be found neceſſary.

All ſtables ſhould be built in a dry ſituation, and in a free air. They ought to be at a diſtance from all boggy or marſhy grounds, and free from all noiſe or diſturbance. The ceiling or roof ſhould be high and lofty, as the heated foul air always aſcends. The dung ſhould never be allowed to rot within the ſtable, (as is done in ſome places,) nor even at the ſtable door; but every thing about horſes ſhould be kept ſweet and clean. The ſtables ſhould be frequently well aired, by keeping the doors and windows open when the horſes are out through the day. Experience teaches us how agreeable and even neceſſary it is to admit freſh air into our own apartments, it is equally neceſſary and uſeful to horſes. No ſtable ſhould contain more than ſix or eight horſes at moſt, for the reaſons already mentioned. The ſtalls ſhould be large and roomy, at leaſt ſix feet wide, in order that a horſe may ſtretch his legs out when he lies down with freedom; and as horſes are ſociable creatures, and always thrive beſt in company with one another, no ſtable ſhould be made of one ſtall only, unleſs it may be ſo ſituated as the horſe that ſtands in it may be within the hearing of other horſes. The ſtable-windows ſhould be large, in order to admit a good deal of light, and made ſo as to let down from the top occaſionally for the admiſſion of freſh air. The damp or moiſture that ſettles on the glaſs-windows ſhould be frequently wiped away, and kept clean and dry. The litter under the horſes ſhould always be put up through the day below the manger, eſpecially when a horſe goes abroad, in order to let the pavement dry and cool;

and when the litter is ſpread down, it ought never to be too thick, for the reaſons already mentioned. A horſe ſhould never be allowed to ſtand on litter through the day unleſs he is unwell or fatigued, when it is preſumed he will lie down to reſt himſelf.

Having already hinted, that too much clothing to horſes, whilſt they ſtand in the ſtable, contributes greatly to render them tender and delicate, beſides expoſing them to all the diſeaſes ariſing from too great heat about their bodies, and likewiſe to thoſe ariſing from an obſtructed perſpiration from cold when they go abroad. It will be proper here to obſerve, that in ſome caſes clothing becomes highly neceſſary. What I condemn is the too conſtant and improper uſe of them, even to exceſs, in warm weather and in warm ſtables. When a horſe is in health, and ſtands idle, very little clothing is neceſſary: A ſingle ſheet or rug will be ſufficient, unleſs the ſtable he ſtands in is very cold. But when a horſe has been overheated, from violent labour or exerciſe, more clothing will be at that time neceſſary, as circumſtances may require, till he becomes moderately cool.

Here I cannot help taking notice of that pernicious cuſtom of girding horſes bodies ſo very tight above their clothing, by means of very broad girths or rollers, having a conſiderable number of ſtraps and buckles, with a view of taking up the horſes belly (as the phraſe is). If ſuch bandages are neceſſary, of which I have great doubt, why are they uſed indiſcriminately to all horſes, and even to thoſe that are naturally light bellied? Poſt and road horſes, when they are fed for ſome time with clean dry food, have as light bellies as the fineſt hunters or racers; and yet no ſuch thing as broad rollers are ever applied to them.

Broad girths, when drawn too tight round the body, impede the free action of the lungs, and, by their compreſſing the liver and other viſcera, the circulation of the blood, &c. in them is conſiderably affected. I have ſeen many horſes, when labouring under a feveriſh diſorder, girded ſo tight with theſe broad rollers, that it occaſioned a more than ordinary difficulty of breathing, attended with great anxiety and reſtleſſneſs; and on ungirding the rollers the animal ſeemed greatly relieved. For the ſame reaſon, too great a number of girths to a ſaddle are hurtful, when two good ones will anſwer the ſame purpoſe.

CHAP. II.

OF FOOD.

IT is not to be expected that I ſhould here enter into a minute detail on the different methods of feeding horſes for different purpoſes, or in particular ſituations. It may ſuffice to lay before the reader the different qualities of fodder and grain that is uſed for horſes, and to point out the effects they produce on the body, and the conſequences that follow upon an improper uſe of them, by giving them in too great a quantity at one time; likewiſe the conſequences that follow from the oppoſite extreme, in feeding horſes too low, in proportion to the labour or exerciſe they are employed in, and to conclude the chapter with ſome general remarks.

Hay is the principal fodder uſed for horſes in Britain. Although there are a great number of herbs and graſſes mixed with it, yet they are all included under the general denomination of hay. The common diſtinction that is made, is that of natural or meadow hay, and the ſown or rye-graſs hay. The natural hay is generally uſed in the ſouthern parts of Britain. From the method obſerved in the making of it, and allowing it to heat, to a certain degree, in the rick or ſtack, it acquires an uncommon ſmell, ſomething like that of malt dried on the kiln. This practice likewiſe gives it a ſweetiſhneſs to the taſte, and which is called *mow-burnt hay.* This ſweet taſte tempts horſes to eat greedily of it; and, as it is of a ſoft quality, they ſwallow large mouthfuls, without chewing it properly. This produces thirſt, and cauſes them to drink a great deal of water. This quantity of groſs fodder, together with the water, conſiderably increaſes the bulk of the ſtomach, which, in this ſtate, compreſſes the lungs, the diaphragm, and other viſcera ſurrounding it, to an uncommon degree. If a horſe is then put to any exerciſe that requires activity or expedition, he is in danger of becoming what is called *broken winded*; for it is always obſerved that this diſorder may be traced from too ſharp exerciſe performed when the ſtomach is full. I have likewiſe obſerved a greater number of broken winded horſes where this kind of hay is uſed, than in thoſe parts where rye-graſs is the common fodder.

Mr Gibſon, in his treatiſe on the Feeding of Horſes, condemns the uſe of rye-graſs as a proper fodder *. He ſays, "That, in Eng-
" land, it is ſeldom given but in the months
" of Auguſt and September, except to horn-
" ed cattle. Before Michaelmas it is to-
" lerably *hard* and dry, eſpecially in dry
" ſeaſons;

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* Vol. I. pag. 100.

" ſeaſons; and many feed their working " horſes with it, mixed with dry clover; " but afterwards it imbibes ſo much moiſ- " ture, that it becomes unwholeſome, and " few horſes that have been uſed to good " hay will care for it." Here I muſt beg leave to differ from Mr Gibſon. For, in this country, where rye-graſs mixed with a little clover is much uſed, it is found to be a clean wholeſome fodder for horſes; and thoſe that are conſtantly fed upon it are not ſo ſubject to be broken winded as thoſe horſes that are fed with natural mow-burnt hay; and, at the ſame time, they perform the exerciſes required of them with ſtrength and vigour. Mr Gibſon, in the ſame page, ſays, that " ſoft hay, of all " others, imbibes moiſture the eaſieſt, and " retains the effects of it the longeſt, which " generally turns it rotten and unwhole- " ſome, and ſo affords but a crude faint " nouriſhment; and thoſe horſes that are " forced to feed upon it, for want of bet- " ter, are generally weak and faint, and "in time grow diſeaſed, if they continue "long in the uſe of it."

Now, it is well known that natural hay is conſiderably ſofter than rye-graſs hay, and, of courſe, more liable to attract moiſture, and acquire all the bad qualities he mentions; whereas rye-graſs hay, being harder and firmer in its texture, will not ſo readily imbibe moiſture; and, from his reaſoning, it ſhould be the wholeſomeſt fodder for horſes. Another recommendation in its favour is, that, being harder and firmer than natural hay, it obliges a horſe to break it down more minutely before he can ſwallow it, which makes it lighter and eaſier of digeſtion, leſs bulky in the ſtomach, and, of courſe, not ſo liable to produce the effect I have formerly mentioned.

Upon the whole, I would obſerve, that whatever be the quality of hay, much depends upon its being well got in; for the beſt graſs that ever was cut for this purpoſe may be ſpoiled by wet weather, or by bad management, in the winning and getting it in; and, where there is a choice, the beſt ſhould always be given to horſes that are employed in active exerciſes.

Clover-hay ſhould only be given to cattle and draught horſes, whoſe labour is ſlow and equal. It cannot be recommended as a proper fodder for horſes that ſtand much at reſt, nor to thoſe who are uſed in violent exerciſe of any kind, as they are apt to over-feed upon it.

Wheat-ſtraw is generally uſed as litter. It is ſeldom given as fodder, unleſs to draught horſes, or when it is chopt or cut ſmall, and mixed with oats, &c. in order to oblige horſes to break their food thoroughly, before they can ſwallow it. Yet the higheſt fed horſes, when it is freſh laid before them, are not only fond of picking the unthreſhed heads of wheat that remain on the ſtraw, but are likewiſe fond of the ſtraw itſelf, by way of a change.

Barley and oat-ſtraw are the common fodder of cattle and farm-horſes. They are ſeldom given to the better kind of horſes, unleſs it be out of oeconomy, or by way of amuſement, when they are ſtanding idle in the ſtable, to prevent them from being reſtleſs for want of other food.

Peaſe and bean-ſtraw are a dangerous fodder to horſes that are not brought up, or gradually accuſtomed to it, as it is hard of digeſtion. It is likewiſe apt to produce flatulencies, attended with gripping pains, and obſtructions in the bowels. It is commonly given to work-horſes and cattle.

New hay of any kind ſhould not be given to horſes, more eſpecially to thoſe who are employed in active exerciſes, as they feed upon it too greedily, and ſwallow it without chewing it properly. It overloads the ſtomach, and, at the ſame time, produces a crude watery chyle, which diſpoſes the horſes to ſweat much, which weakens them greatly; therefore, it ſhould never be given till the ſuperfluous moiſture it contains is dried up, which will require ſome months after it is got in. But to ſuch horſes as are employed in very active exerciſes, it ſhould at leaſt be eight or ten months old.

Graſs is the moſt natural food for horſes; but, whether it proceeds from the coldneſs of the ſoil or climate in Britain, it does not produce ſuch rich nouriſhment as to enable them to perform any active exerciſes with the ſame ſtrength and vigour as in warmer climates, without the addition of grain, as oats, &c. When horſes are allowed to run abroad, and have a ſufficiency of oats, and, at the ſame time, are provided with proper ſhades to protect them from the inclemency of the weather, we find, from experience, that they thrive, and perform any active labour, as well as thoſe horſes that are kept in ſtables on dry food only; together with this advantage, that they are not ſo ſubject to diſeaſes, nor to lameneſs, but what, in the latter caſe, may proceed from accidents among themſelves.

Graſs is not only food, but it is likewiſe phyſic, to horſes—I mean the early or ſpring graſs. Where the viſcera are ſound, it cures moſt of the diſeaſes they are ſubject to, with more certainty and expedition than can be done by medicine. After a long courſe of dry feeding and hard labour, it reſtores the conſtitution to the higheſt health and ſtrength. It cleanſes the bowels, and carries off thoſe chalky concretions that are apt to be produced in the ſtomach of ſuch horſes as have been long uſed to dry hard feeding. It likewiſe carries off the different ſpecies of worms with which they are infeſted. It renovates, as it were, the whole maſs of fluids in the body. It promotes all the ſecretions, and removes glandular obſtructions; and, in many caſes, it carries off ſtiffneſs in the joints, and other lameneſs; and, upon the whole, it reſtores the body to the higheſt ſtate of perfection of which it is capable.

But the advantages I have now mentioned that ariſe to horſes from their being out on the ſpring graſs, are in a great meaſure loſt to them: If they are allowed to continue through the ſummer, when the graſs becomes too rank, they then become fat and corpulent; for I would always have it underſtood, that a fat corpulent horſe is by no means fit for active exerciſes of any kind, neither can he go through them without danger to his health and ſoundneſs: For this reaſon, it is cuſtomary, when horſes are too fat, and full of fleſh and blood, to reduce them to a proper ſtate, by evacuations, as bleeding, purging, &c. which, when too frequently repeated, impair their conſtitutions, and bring on a premature old age.

If thoſe horſes that are intended for hunting, &c. were taken up from graſs as ſoon as it begins to ſhoot, and kept in conſtant daily exerciſe, although fed with a very moderate allowance of oats at the time, as the hunting ſeaſon approaches, both their feeding and exerciſe may be gradually increaſed. They will become, by this management, in a proper condition for the ſevereſt exerciſes, without purging or evacuating medicines of any kind. But this will be more fully illuſtrated under the article of Purging.

It has been obſerved above, that graſs diſſolves thoſe chalky and other concretions that are apt to grow in the ſtomach and other viſcera of horſes. Van Swieten, in his Commentaries upon the Aphoriſms of Dr Boerhaave, vol. 9. p. 177. when treating of chalky matter found in the liver, &c. ſays, "Sometimes there are concretions "of the like ſort found in this organ, but "of a more friable texture, and of a whiter

" appearance, like gypſum or plaiſter of
" Paris. Such incruſtations were often ob-
" ſerved by *Gliſſon* in the pori biliarii, and
" its larger branches, diſperſed through the
" livers of oxen that had been fed in ſtalls
" with hay and ſtraw, during the winter
" ſeaſon, and without exerciſe. But then
" theſe concretions are very friable; and
" they afterwards diſſolve again, and paſs
" out of the body, when the cattle come to
" feed upon the freſh graſs of the mea-
" dows; for, in oxen that are ſlain in the
" ſpring and ſummer, they are very rarely
" to be found."

In diſſecting horſes, I have frequently met with chalky concretions in their livers and in the lungs, eſpecially in thoſe that have been fed long on dry food, and likewiſe round balls in their ſtomachs, ſometimes of an oval ſhape. The latter ſeem, for the moſt part, to be compoſed of the duſt they lick from their own bodies mixed with the hair. Whether the freſh graſs diſſolves them, is not ſo certain; but that it cauſes theſe concretions to paſs through the inteſtines, I have had a full demonſtration. In May 1786, a horſe that had been long fed on dry food was turned out to graſs; in about eight or ten days afterwards, he was ſeized with violent griping pains, which laſted about 24 hours, when he died. As the horſe was very fat, the man who had the charge of him wanted to make ſomething of his greaſe: In ſearching for it, he obſerved a large portion of the inteſtines of a very black colour; and, on feeling it, found ſomething hard and weighty. He immediately cut the inteſtine open with his knife, and took out a large oval hard ball, which meaſured four inches in length, and three inches and a half in breadth; and which I have now in my poſſeſſion. That this concretion was originally formed in the ſtomach, there can be no doubt, as they frequently, upon diſſection, have been found there; and nothing

thing but its great bulk had hindered it from paſſing through the inteſtines.

The author I have juſt quoted, in the ſame volume, page 184. mentions another very ſalutary effect of graſs, in curing a man of a moſt obſtinate jaundice. He ſays, "Some years paſt, I had the care of "a poor man, who was obliged to main- "tain himſelf and a family by his day la- "bour, and therefore unable to ſupport "the expences of a courſe of medicine; "but, having good ſpirits, and a great de- "ſire to be relieved of his malady, by pro- "miſing him a cure, I eaſily perſuaded "him to live altogether upon graſs. He "boiled a large quantity of graſs in pure "water; and, after ſweetening the decoc- "tion with honey, made uſe of it for his "common drink; and the tendereſt graſs, "ſprouting in the ſpring ſeaſon, or riſing "up again after the firſt mowing, he boil- "ed in freſh broths, and made it entirely "his food. He confeſſed, indeed, that

" for ſome time in the beginning of this
" courſe, his diet did but little pleaſe him ;
" he could afterwards eat it without any
" kind of diſguſt, and therefore uſed it for
" two whole years, except for ſome parts
" of the months in the winter time. He
" aſſured me, that he could eaſily diſtin-
" guiſh the beſt paſturage by the flavour
" of the graſs, and that he was obliged
" ſecretly to cut out his diet from the mea-
" dows ; ſince the farmers, finding him to
" have ſo large an appetite, often gave him
" forcible repulſes. By this courſe only,
" he was perfectly cured of a moſt obſti-
" nate jaundice, in which even his ſaliva
" began to taſte bitter ; and I ſaw him
" ſome years afterwards in a good ſtate of
" health."

From what has been now obſerved, with reſpect to the properties of the early or ſpring graſs, it will be obvious how neceſſary it is to the health of horſes to let them have it as early in the ſpring as circumſtances will admit; and thoſe horſes that cannot be turned out to paſture, ſhould have it in the houſe as ſoon as it will cut. How many of the beſt horſes in Britain fall a ſacrifice to the moſt loathſome diſeaſes, by keeping them, for years together, upon hard dry food, without ever taſting green herbage of any kind; yet many people, ignorant of the advantages that ariſe to horſes from the uſe of the early ſpring graſs, think it a recommendation, and boaſt of their horſes not having had any for ſuch and ſuch a length of time, or that ſuch a horſe (as the phraſe is) has ſo many years *hard meat in his belly:* For my own part, ſo far is it from being a recommendation, that, on the contrary, I look on the ſituation of ſuch horſes as tending towards the moſt fatal diſeaſes; and experience has confirmed the obſervation.

This practice of feeding horſes for years together on hard dry food, does not prevail ſo much in this part of the kingdom;

but in the more ſouthern parts it is very common: And this I am convinced is one cauſe why that loathſome diſeaſe the *farcy* prevails more in the latter than in the former. We know that ſailors, and others who are confined for a length of time to live conſtantly on dry food, and that which is ſalted, are very ſubject to the ſcurvy: We likewiſe know what great advantages they reap from freſh greens and ripe fruits, in recovering them from this loathſome diſeaſe. It is the ſame with horſes who are fed long on dry hard food; they are likewiſe ſubject to the ſcurvy, which in them is called the *farcy*.

Perhaps it may be ſaid, that horſes who are kept for active exerciſes reap no advantage from their being fed with oats, &c. whilſt they are on graſs; becauſe the purging that is brought on by feeding on the graſs will carry off the nouriſhment that ſhould be produced from the oats, &c. In anſwer to which, I would obſerve, that, although the early graſs purges a horſe gently at firſt feeding on it, yet this purging does not continue long, neither is it attended with that weakneſs, faintneſs, and loſs of fleſh, which is obſerved in thoſe horſes who are purged by ſtrong medicines, where the evacuation is brought on ſuddenly, and perhaps to an exceſs; for, neither the human nor animal body can ſupport ſudden evacuations of the latter kind, without a weakneſs and faintneſs enſuing, although they can bear a little laxity from diet without any inconvenience.

A change of diet is not only agreeable, but it is wholeſome for horſes, as it contributes to keep them open in the body. Malt mixed occaſionally with their food proves a medicine.

Wheat, notwithſtanding it affords the moſt nouriſhment, is ſeldom given to horſes, probably owing to its price being higher than that of other grain. It is apt to purge horſes a little on the firſt uſing of it; they eat it greedily, and are fond of it; but, as it becomes very ſlippery from the moiſture in the mouth, it is ſwallowed whole, and paſſed through the body in that ſtate; but, when it is given bruiſed, or mixed with chopped ſtraw, the horſe is obliged to break it minutely with his teeth before he can ſwallow it. It then proves very nouriſhing, and enables them to go through their labour with ſtrength and vigour: It likewiſe makes horſes coat well, that is, it makes their hair lie ſmooth and ſhining.

Lord Kaimes, in his Treatiſe on Agriculture, has been at great pains to aſcertain the weight of the different kinds of grain; from which may be inferred the quantity of nouriſhment each kind produces. By his calculation, the boll of middling wheat weighs 14 ſtone Dutch weight; the huſks weigh two ſtone; for which reaſon, when wheat is given to horſes, a leſs quantity will be neceſſary than of oats.

Barley likewiſe purges horſes on the firſt uſing of it; but, when it is given mixed with cut ſtraw, for the purpoſe already mentioned, it proves a wholeſome nouriſhing diet: It is the principal food of the Arabian, the Barbary, and other eaſtern horſes, who undergo great fatigue, and perform journies with incredible ſwiftneſs. Yet I have been informed, by a very ingenious gentleman, who reſided ſeveral years in England, that farmers, grooms, &c. are much prejudiced againſt feeding their horſes with barley, as they alledge that it gives them the itch. But I can affirm, from my own experience, that it has a very oppoſite effect; and that if horſes, who are troubled with this diſorder, are fed on barley, either raw or boiled, it will contribute greatly towards the cure. The boll of middling barley weighs 18 ſtone Dutch weight; the huſks one ſtone four pound. When it is boiled, it proves light, and eaſy of digeſtion; for which reaſon, it is frequently given to horſes when they are ſick, or to prevent coſtiveneſs.

Oats, notwithſtanding they are reckoned more heating and binding than any of the former grain, yet they are generally given to horſes in Britain. To poſt and other carriage-horſes they are frequently given, mixed with beans, which obliges them to break both oats and beans minutely before they can be ſwallowed. The adding of the beans makes this feeding very nouriſhing. On that account, beans ſhould never be given mixed with oats to thoſe horſes that ſtand much at reſt, or have not ſufficient exerciſe. The boll of middling oats weighs 14 ſtone Dutch weight; the huſks weigh ſix ſtones. Therefore, as oats have more huſks than any other grain, a greater quantity is neceſſary. For this reaſon, it is probable that the ſtandard meaſure of oats is larger than that of other grain. The conſtant feeding with oats, although it is eſteemed what is called clean feeding, yet it is apt to make horſes too coſtive, &c.; to prevent which, bran, maſhed up with boiling water, is given once a week, or as circumſtances may require.

Beans are ſeldom or never given to horſes by themſelves, unleſs to work-horſes. When they are boiled, they afford the ſtrongeſt nouriſhment of all the other grain. The boll of middling beans weighs fifteen ſtone eight pound; the huſks weigh eight pound; which is the ſmalleſt proportion of huſks in all the grain now mentioned. Of courſe they contain more nouriſhment; but, as they contain a great proportion of fixed air, when given in a raw ſtate and in too great a quantity, they are found to produce flatulencies, gripes, &c.

Having thus endeavoured to lay before the reader the different properties of fodder and grain, &c. uſed in the feeding of horſes, it now remains to conſider how they are or ought to be applied, in ſuch a manner as may be of greateſt benefit to their health, &c.

It has already been obſerved, that the food of horſes, in their natural ſtate, is exceedingly ſimple, conſiſting chiefly of herbage, as graſs of different kinds, and water for drink. Theſe afford nouriſhment ſufficient to keep them in fleſh and ſtrength, whilſt they have nothing to do but range the fields at large; but, in a domeſtic ſtate, where they are put to hard labour, and violent exerciſe, food of a more generous nature becomes neceſſary, to ſtrengthen and enable them to perform the various exerciſes required of them.

The food that is commonly uſed for horſes in great Britain conſiſts of hay, oats, beans, barley, and bran. The latter of theſe is commonly given to horſes when ſick, boiled, or made into a maſh, with warm water, in order to keep them open in the belly, when they ſeem to be coſtive, which happens frequently to horſes when kept long on dry food, even in the beſt ſtate of health. But oats and beans are given to thoſe horſes who perform hard labour, or active exerciſes, as they are found to produce the beſt and the ſtrongeſt nouriſhment in this country.

It will perhaps be not only entertaining but inſtructive, for many of my readers, to be informed how horſes are fed in different countries, and what incredible fatigue they will undergo, upon a very ſmall allowance. The Count de Buffon, Vol. III. page 375. tells us, "That the Tartar horſes will travel two or three days without "ſtopping; receiving, for four or five "days on end, only a handful of herbage "every eight hours; and, at the ſame "time, kept from drinking for twenty-"four hours." And, in the ſame volume, page 369. he ſays, "That the Arabian horſes are rather meagre than fat.

"During the day they are not permitted "to eat, but are watered twice or thrice. "At ſun-ſet, a bag, containing about half "a buſhel of barley, is paſſed over their "heads, and faſtened to their necks. This "bag is not removed till next morning, "when the barley is entirely conſumed. "When the graſs is good, they are turned "out to paſture; and, during the reſt of "the year, they are allowed neither graſs "nor hay, and rarely ſtraw, barley being "their only food. And great care is taken to give them only as much as is "barely neceſſary; for too much nouriſhment makes their legs ſwell, and ſoon "renders them uſeleſs." In page 371. of the ſame volume, the Count de Buffon quotes Pietro della Valle, who prefers the common horſes of Perſia to the fineſt Neapolitan horſes. He ſays they are generally of a middle ſtature; and ſome of them are very ſmall, but ſtrong and active; while others exceed the ſize of the Engliſh ſaddle horſes. They have light heads and fine necks. Their ears are handſome and well ſituated. They have ſlender legs, fine cruppers, and hard hoofs. They are docile, ſpirited, bold, and capable of enduring great fatigue. They are extremely ſwift, and never ſtumble. They are robuſt, and ſo eaſily nouriſhed, that their only food is barley, mixed with cut ſtraw; and they are grazed during ſix weeks of the ſpring only.

In page 372, Buffon tells us, that "the "horſes which are bred in the Indies are "very indifferent. Thoſe uſed by the "great men of the country are brought "from Perſia and Arabia. They are fed "with hay during the day; and, at night, "in place of barley and oats, they get "peaſe boiled with ſugar and butter. This "nouriſhing diet ſupports them, and gives "them ſome degree of ſtrength; without "it, they would ſoon periſh, the climate "not being adapted to their conſtitution."

Mr Berringer, in his excellent treatiſe on Horſemanſhip, vol. i. page 134. quotes a paſſage from Cambridge's introduction to his Account of the War in India, where he ſays, "That the Indians feed their horſes in the rice-fields; and, when fleſh is "plenty, they boil the offal to rags, and, "mixing it with butter, and ſome ſorts of "grain, make balls, which they thruſt "down the horſes throats. In ſcarcity of "proviſion, they give them *opium*, which "has the ſame effects both on horſes and "men; for it at once damps their appetites, and enables them to endure fatigue."

The Count de Buffon likewiſe tells us, in vol. iii. page 388. "That, in Iceland, "where the cold is exceſſive, and where "often no other food can be had than "dried fiſhes, the horſes, though ſmall, "are extremely vigorous."

Pontoppidan[*], in his Natural Hiſtory of Norway, ſays, that, in the year 1302, a man, whoſe name was *Huleickſon*, was the firſt who gave his horſes oats in that country, whence he had the nickname of *horſe-corn.*

Quod in Norvegia primus equos avena paverit.

The horſes here are not ſubject to ſo many diſeaſes as in moſt other countries, and in particular the ſtaggers.

In Britain, it was formerly the cuſtom to give horſes baked bread, known by the name of *Horſe-bread*, inſtead of oats, and other grain.

“ The Arabian horſes intended for hunting in Arabia or Barbary, ſeldom eat herbage or grain. Their common food, which conſiſts of dates and camel's milk, is given them every morning, and at night,

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[*] Berringer, vol. i. page 147.

" night. Theſe aliments, inſtead of fat-
" tening them, render them meagre, ner-
" vous, and very fleet. They ſpontane-
" ouſly ſuck the ſhe-camels, whom they
" follow till the time they are ready for
" mounting, which is not before the age
" of ſix or ſeven years."

Berringer, in his Horſemanſhip, tells us, that " *Nemeſian* recommends ſtraw and
" barley as very nouriſhing diet; and it
" certainly conduces very much to keep
" horſes in health, ſpirits, and wind, and
" in a ſtate of body fit for any kind of
" labour, as it ſupports and ſtrengthens,
" without rendering the animal heavy and
" corpulent. The ancients, likewiſe, on
" certain occaſions, gave their horſes wine
" to drink, to animate and refreſh them.

" The Kalmuck horſes are ſo hardy and
" ſtrong in their conſtitution, as to be able
" to run three or four hundred Engliſh
" miles in three days. They ſubſiſt, ſum-
" mer

" mer and winter, ſolely upon graſs in the
" great deſarts."

To illuſtrate what may be farther advanced, it will be neceſſary to premiſe ſome remarks relating to the animal oeconomy, in converting the food into nouriſhment, and its mixing with the blood.

The food that is taken in at the mouth muſt undergo a preparation in the ſtomach, before it can be aſſimilated, or mixed properly with the humours of the body, ſo as to be converted into nouriſhment. Thus, whilſt the food is chewing or grinding between the teeth, it is mixed with the ſaliva, which is ſeparated from the glands of the mouth and jaws; and, when ſufficiently broken down, it is ſwallowed, and taken into the ſtomach, and there mixed with other juices, where it undergoes certain changes, and produces a milky liquor, called chyle.

This chyle is conveyed out at the ſame orifice of the ſtomach, alongſt with the groſſer part of the food, into the ſmall guts, where it is abſorbed, or taken up by the lacteal veſſels, whoſe mouths open in almoſt every point of the inteſtines, and by them is conveyed into its proper receptacle, and from thence into the maſs of blood. The groſſer parts of the food, by the periſtaltic or wormlike motion of the inteſtines, are carried backwards, and voided, in the form of excrement or dung, but not before it is drained of all the chyle it contains in the larger inteſtines.

The chyle being thus mixed with the blood, is firſt carried, by the force of the heart, into the lungs, where it is ſaid to undergo certain changes, in order to fit it for circulation and nutrition, &c. Being acted upon by the veſſels of the lungs, and at laſt thoſe of the whole body, it becomes intimately blended with, and acquires the nature of blood.

The chyle that is formed from the food taken into the ſtomach partakes of the nature of the food that is eat, which, notwithſtanding the digeſtive faculty, is capable of forming chyle of different aliments: Yet, as I have already obſerved, ſome kinds of food will produce a ſtronger and a more nouriſhing chyle than others, as oats, beans, &c. which, like wines taken in moderation to the human body, excite an activity in all the members, and diffuſe a certain chearfulneſs and vigour through the whole ſyſtem. Thus, horſes taken from a low moiſt diet, and fed with oats, &c. ſoon turn wanton and frolickſome: Hence, likewiſe, thoſe horſes that are employed in very hard labour are fed with ſuch nouriſhing diet, to enable them to perform it with vigour. This kind of high feeding keeps them as it were in a conſtant ſtate of inebriation; and from this we can account why a horſe that (as the phraſe is) *has good meat in his belly*, will perform any violent labour or exerciſe for a longer time, and much better,

ter, and with greater eaſe to himſelf, than he would do if he was fed upon more ſimple and leſs nouriſhing diet. Hence, likewiſe, it will be obvious, from the ſame parity of reaſoning, that, from a defect in the quantity or quality of the food, the body cannot be ſufficiently nouriſhed, and, of courſe, the animal will become weak and feeble.

The blood being thus conſtantly ſupplied with freſh chyle, and conveyed to every part of the body by the force of the heart, nouriſhes the different parts, and ſupplies the waſte that has preceded in the body.

The effects of nouriſhing food upon a lean horſe, or on thoſe that are not accuſtomed to a rich diet, provided they are otherwiſe in health, are very ſoon viſible; it changes the whole ſyſtem, by the alteration it produces in the fluids. The fluids being enriched, act likewiſe upon the muſcular fibres of their containing veſſels, and ſtimulate them as it were to diſpel the watery or ſerous parts of the blood by ſweat on the ſurface of the body, even when the horſe ſtands at reſt in the ſtable; and, at the ſame time, it promotes the neceſſary ſecretions in the glandular ſyſtem.

Thus it is obſerved, that, when horſes are taken up from graſs late in the ſeaſon, and put on a dry nouriſhing diet, they ſweat much, ſtanding idle in the ſtable; they are then ſaid to be *foul in the body*, when, at the ſame time, this ſweating or foulneſs in the body proceeds, in ſome meaſure, from the too great quantity of ſerous or watery particles contained in the maſs of fluids, which, on the change of diet, are thrown off in this manner by the new acquired ſtrength of the muſcular fibres of the veſſels, compreſſing their contents more cloſely, and forcing the ſerous or watery parts through the fine capillaries or pores of the ſkin in the form of ſweat. This might be farther illuſtrated, from the effects of purging and diuretic medicines given in theſe caſes, eaſes, and the ſucceſs attending them, in removing this ſymptom of ſweating in the ſtable, &c. and which will be further explained when I come to treat of the operation of theſe medicines.

Rich feeding, with idleneſs, produces a ſuperfluity of nouriſhment. The veſſels become turgid and full of blood. The body grows corpulent and fat, and of courſe unfit for the active motions required of a horſe; neither is he able to continue labour or exerciſe for any length of time, without being fatigued by his own unwieldineſs, and, if overheated, not without danger of being attacked by ſome violent diſorder. Labour or exerciſe increaſes the circulation of the blood, &c.; and, if continued long, or carried to exceſs, the red blood is forced into veſſels in which it does not uſually circulate, in an unactive ſtate. The fat is diſſolved by the great heat and rapid motion of the fluids, and produces what is called an *oily plethora*. If a fever enſues, which frequently happens in the above caſe, the fluids are diſpoſed to putrefaction, which, if not timely prevented, proves fatal.

High feeding, when there is not a proportional waſte in the conſtitution, from labour or exerciſe, produces a long train of diſeaſes, which the leaſt trifling circumſtance may bring forth: For there is no ſtate or habit of body more liable to diſeaſe than that of the too fat and full habit, of which we daily ſee a number of inſtances.

Dr Bracken, in his ſecond volume on the article of Feeding Horſes, ſays *, "It
" is very odd to hear ſome men talk with
" relation to the allowance of oats, &c.
" which a horſe ſhould have *per diem*;
" for a great many imagine they are not
" neceſſary for horſes that have much reſt,
" or are not travelled long ſtages: Yet I
" muſt tell theſe gentlemen, that they run
" the hazard of bringing on diſtempers, if
" they

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* Page 99.

" they ſhould have occaſion to uſe their " horſes upon an expedition, when they " are only fed with hay, and a ſcanty " feeding of oats."

I cannot help diſſenting from the Doctor's opinion, and claſſing myſelf amongſt the number of thoſe who do not imagine that a great allowance of oats * are neceſſary for thoſe horſes that have much reſt, for the reaſons I have formerly mentioned. Beſides, what the Doctor advances is not only contrary to reaſon and experience, but the eſtabliſhed practice of intelligent ſportſmen, who have ſeen its bad effects in bringing on thoſe very diſtempers the Doctor alledges they run the hazard of.

I would farther obſerve, that no man who is acquainted with horſes would think of uſing them on any occaſion that required expedition, without previouſly preparing

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* The Doctor generally allows three feeds per day, mixed with beans.

ring their bodies for it, by good feeding and regular exerciſe: For, although a horſe was daily allowed as much oats and beans as he could poſſibly eat, yet that alone would not put him in the condition neceſſary to perform any labour or exerciſe where expedition is required.

The Doctor, in the ſame page, relates a caſe, in order to corroborate what he advances in the paſſage I have quoted, where he ſays, "One of my patients having occa-
" ſion to go to the Bath waters for the re-
" covery of his health, happened to borrow
" a chariot and pair of geldings from a gen-
" tleman in Lancaſter, in order to carry him
" to the ſtage-coach at Cheſter. The geld-
" ings were large and ſtrong, as well as in
" good health, and *fat*, but had had too ſcan-
" ty allowances of oats, &c. for their ſize;
" three or four quarts a-piece per day, or,
" as I think, leſs, as the coachman told me,
" being the uſual ſtint; which made me
" caution that they ſhould travel very ſhort
" ſtages;

" ſtages; becauſe I was afraid he might loſe " both of them before he got back to Lan- " caſter, not only by reaſon the weather " was hot and ſurfeiting, but they had not " eaten a ſufficiency of corn and beans be- " fore hand; ſo that, after they were heat- " ed, they would be longer in cooling. In " fine, it ſo fell out, that one of the geld- " ings kicked up his heels at Preſton, on " his return home." Here I would again beg leave to differ from the Doctor, as it would appear, from the circumſtances he relates, that it was the fatneſs of the horſe, together with his not being in the uſe of performing ſuch violent labour, that was the cauſe of his death; to which the heat of the weather, and the habit of body he was in, would no doubt contribute. Neither could the horſe's death be attributed to his not having eat a certain quantity of oats and beans every day before he began his journey; for, although a horſe be ever ſo well fed, unleſs he be daily accuſtomed to labour, or exerciſe, his fleſh will not acquire that rigidity and firmneſs that is neceſſary to enable him to perform any exerciſe that requires expedition, and continued for a length of time, without endangering his health or his ſoundneſs. Thus, if a man who is not accuſtomed to athletic exerciſes, ſhould be under the neceſſity of exerting himſelf in walking, leaping, or running, &c. for a length of time, he will, of courſe, be overheated, and perſpire plentifully; but, when he cools, he will feel himſelf ſtiff and pained all over his body: Yet, if he continues theſe exerciſes daily, for any length of time, they will not produce theſe effects to ſuch a degree. The habitual practice of exerciſe renders the muſcles more pliant; the profuſe perſpiration that takes place in the beginning of theſe exerciſes carries off the ſuperfluous fluids; and the remaining maſs circulates with more freedom through the lungs. Hence reſpiration or breathing becomes more free and eaſy, of courſe the exerciſe leſs fatiguing; and this every man muſt, in ſome period of his life, have experienced. It is the ſame with horſes; for, although the animal body is conſtructed on a larger ſcale, yet its oeconomy is regulated by the ſame laws with that of the human body.

If a lean poor horſe is allowed to ſtand idle, and fed plentifully with rich food, he will grow fat, plump, and full of juices. If he is then regularly exerciſed, or worked hard for a few weeks, he will loſe a conſiderable quantity of his fleſh and weight; notwithſtanding of which, he will be ſtronger, and fitter for labour, than when he was fat and plump; becauſe, from the labour and exerciſe he has undergone, the muſcular fibres in general are thereby, as it were, more conſolidated. But, let the ſame horſe again ſtand idle, and be plentifully fed, yet ſome conſiderable time will elapſe before he become ſo fat and full, or, in other words, before the muſcular fibres acquire their former lax ſtate. Hence it is that horſes, when newly taken from the late graſs, are in this lax habit of body, and ſweat much when put to labour or exerciſe. But, on changing their food to that which is dry, and more nouriſhing, a richer chyle, and hence better blood, is produced; which, by invigorating the whole ſyſtem, ſtrengthens the fibres, and enables them to act more powerfully on the fluids, and produces the effects already mentioned. We have a farther proof of this in poſt and other horſes, when they are firſt ſet to work, whilſt their fibres are in this lax ſtate, as their exerciſe or labour becomes violent, they breathe with difficulty, and ſweat moſt profuſely; but, by perſevering in this exerciſe, and feeding them with rich dry food, as oats, beans, &c. their muſcular fibres acquire a greater degree of rigidity, their fleſh becomes firmer, they breathe with freedom, and at length are able to perform the moſt violent labour or exerciſe with expedition and eaſe. In this caſe, according to the common phraſe, they are then ſaid to be *in wind*. I might enlarge farther on this head; but it would perhaps be a digreſſion too minute for the greater part of ordinary readers; I ſhall therefore now proceed to the feeding of horſes.

What an eminent phyſician * has ſaid, with reſpect to the diet, &c. in the human body, may be applied with propriety to horſes. "Many of the occaſional cauſes "(ſays he) of diſeaſes do certainly ariſe "from our inattention to the rules of diet, "which are ſuggeſted to every man by "plain common ſenſe, and daily experi-"ence. From this inattention it is that ſo "many infants, which at their birth had "all the marks of a ſound conſtitution, "have either died before they arrived at "maturity, or have with great difficulty "attained it, with irretrivably broken "health: Hence alſo it is that many of "the ſtouteſt men either ſhorten their

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* Dr Mackittrick, page 209.

" lives by violent diſeaſes, or languiſh
" through the latter part of life under all
" the baneful effects of debauch."

As horſes are not endowed with reaſon, but guided entirely by inſtinct to ſuch aliments as correſpond with their conſtitutions, the appetite for food excites in them a ſtrong deſire to gratify this ſenſe. They are therefore apt to indulge in it to exceſs when it is laid before them, eſpecially grain of any kind, and more ſo when confined in the ſtable, where they have no other amuſement to divert them from it. For, in the fields at graſs, after they are ſatisfied with eating, they run about, and play with one another a conſiderable part of their time, and do not begin to eat till prompted to it by hunger. For this reaſon, there are but few or no inſtances of horſes over-eating themſelves when running at graſs.

Young horſes, in particular, are moſt liable to be injured by too much feeding with grain. The blood of young animals is naturally diſpoſed to be hot; high feeding increaſes this diſpoſition, and renders them more ſubject to inflammatory diſeaſes. Hence high dry feeding with oats, &c. is ſaid *to burn up the body of horſes.* This high feeding, likewiſe, produces a plethoric, or too full habit of body, which renders them more liable to fevers, &c. and to ſwelled legs and greaſy heels, and, upon catching the leaſt cold, to a variety of other diſorders.

Beſides the ordinary feeding with oats, &c. at ſtated times, through the day, it is too common to keep the racks at all times filled with hay. Hence many horſes ſtuff themſeves too full. They drink a great quantity of water, which eating a deal of hay prompts them to; and, when they come to be exerciſed, or even when performing any ordinary labour, they are hardly able to breathe. Numbers of horſes are daily ruined from this practice; yet many people are not aware of its effects.

If they reflected, but for a moment, what would be the conſequence to themſelves, were they obliged, after a full meal, to perform ſome violent exerciſes, as running, leaping, &c. they could hardly fail of being convinced of the impropriety of this injudicious treatment to their horſes.

It is likewiſe to be obſerved, that there are horſes of delicate ſtomachs, who loath their food, from its being too conſtantly before them, and not having ſufficient time or exerciſe to digeſt what they have ate. Beſides, their conſtantly breathing upon it taints it ſo, that they cannot reliſh it afterwards. It ought likewiſe to be remembered, that it is not the quantity of food alone which a horſe eats that produces the wholeſomeſt nouriſhment, but it is what he digeſts well, that invigorates and ſtrengthens the conſtitution; for, when the ſtomach is overloaded with food, the body is dull, heavy, oppreſſed, ſluggiſh, and ſtupid. It likewiſe impairs the digeſtive faculty, and fills the veſſels with crude chyle, from which diſeaſes

iſeaſes ariſe; beſides the immediate effects which the great bulk of the ſtomach, when diſtended with ſo much fodder, has upon the lungs, &c. by obſtructing their free motion, ſtraining the diaphragm, and producing aſthmatic complaints, as broken wind, purſiveneſs, &c.

Throwing great quantities of clean grain before horſes at one time is very improper; they, in this caſe, dip their mouths in it with eagerneſs, by which means they graſp more than they can break down properly; they devour it greedily, and ſwallow whole mouthfuls of it almoſt dry. The moiſture in the ſtomach, or water drunk immediately after eating, cauſes the grain to ſwell, by which the ſtomach is greatly diſtended, and thereby loſes its contractile power to act upon the food. By its uncommon preſſure upon the inteſtines, the paſſage for the food backwards is obſtructed. The confined air, ariſing from the indigeſted food not having a ready paſſage backwards,

wards, and horſes not poſſeſſing the power of eructation or belching, the air, by the heat and confinement, becomes rarified to a great degree, the horſe is ſeized with the moſt acute pains; as they increaſe, he becomes convulſed, and in many caſes the ſtomach burſts, and death follows of courſe. Out of a number of caſes where the above was diſcovered on diſſecting the bodies of horſes, I ſhall only mention the two following.

A young draught horſe was fed in the morning with too great a quantity of barley mixed with peaſe, and had been allowed to drink water immediately thereafter. He was yoked to a two wheeled chaiſe, in order to travel a few miles, and was obſerved, about the middle of the day, to be very uneaſy, frequently attempting to lie down. As ſoon as he was unyoked, he lay down, and tumbled about, frequently lying on his back, ſtarting up ſuddenly, and turning his head towards his belly. He continued thus in great agony till towards next morning, when he died. Upon opening his body, the ſtomach was found burſt, the barley and peaſe moſtly entire, only greatly ſwelled, and the whole contents of the ſtomach, which were very conſiderable, ſpread through the abdomen.

The other caſe was that of a horſe who had been fed with too great a quantity of oats and barley, and had been allowed to drink water freely afterwards. He was ſeized with griping pains, ſo that he frequently lay down and tumbled, ſeemingly tortured with the moſt acute pains. He died next day. Upon opening his body, the ſtomach was found diſtended to a moſt enormous ſize, but was not burſt. Its coats were ſo very thin, from the great diſtention it had undergone, that its coheſion was almoſt deſtroyed, and had more the appearance of a coat of mucus or ſlime than the ſtomach. The oats and barley were for the moſt part entire as they were ſwallowed, only greatly ſwelled, from the moiſture they had imbibed.

From what has been now ſaid, it will appear how neceſſary it is not to allow horſes to eat too great a quantity of grain at one time, but to give it in ſmall quantities, and repeating it the more frequently, ſpreading it carefully in the trough or manger. At the ſame time, it will ſhow the propriety of mixing with it a little chopped ſtraw or hay, in order to make them chew it more thoroughly before they ſwallow it. This proceſs likewiſe prepares the food for being properly digeſted, and not a ſingle grain of it is loſt. The method of feeding horſes with bruiſed grain and chopped ſtraw, as recommended by the Right Honourable the Earl of Pembroke, in his excellent treatiſe upon horſes, is exceedingly proper. "Every grain (ſays he) goes to nouriſh-
"ment; none is to be found in the dung;
"and three feeds of it go farther than four,
"as commonly given, which have not
"been

"been in the mill. But wheaten ſtraw, "and a little hay too ſometimes mixed "with it, is excellent food. To a quarter "of corn put the ſame quantity of ſtraw. "It obliges them to chew their meat, and "is many other ways of uſe."

On the other hand, feeding horſes in the oppoſite extreme, and keeping them on too ſmall allowance of food, when they are worked hard, alſo diſpoſes them to many diſeaſes; the horſe becomes weak and ſpiritleſs, his body is emaciated, the circulation is faint and languid, dropſical ſwellings appear in different parts of the body, the blood itſelf loſes its colour and glutinous quality, and the animal ſinks under a complication of diſeaſes, which are conſequent upon an impoveriſhed ſtate of the blood and juices. Hence, therefore, it will appear what care and attention are neceſſary in the feeding of horſes, and how much depends on the conducting it in a proper and regular manner.

Although it is extremely difficult to lay down any fixed rules for the feeding of horſes, yet it may be obſerved in general, that all extremes in the feeding of them ought to be avoided. Thoſe that are conſtantly employed in hard labour, or active exerciſes, require to be fed with more grain than thoſe that ſtand much at reſt in the ſtable, or only perform gentle exerciſes, which occaſion no great waſte in the conſtitution. Upon the whole, the feeding of horſes ought at all times to be proportioned to the labour or exerciſes they are employed in. At the ſame time, their food, as I have formerly obſerved, ſhould be given them in ſmaller quantities, and more frequently repeated, than is commonly done.

It is equally difficult to aſcertain the quantity of grain that ſhould be given to a horſe in the twenty-four hours, as the meaſures in the different counties differ very much. Poſt-horſes, hunters, and others who are employed in ſuch violent exerciſes, ought to be fed chiefly with grain during the continuance of theſe hard exerciſes. The former frequently eat from four to ſix or more feeds of oats mixed with beans per day of the oat ſtandard meaſure, which is the largeſt meaſure of all other grain. But this high feeding ſhould not be continued for too great a length of time, without a little relaxation, both from ſevere labour and high feeding. The latter ſhould be changed occaſionally to that which is ſoft and moiſt, as boiled barley, malt, or a little freſh graſs in the ſeaſon. This ſhould be continued for a ſhort time only, by way of change of diet. From a due attention to this manner of feeding, horſes may be kept fit for any kind of active exerciſe, without exhauſting their conſtitutions, and endangering their healths, from their being kept too long at one time on dry hard food.

Wheat and barley ſhould likewiſe be given to horſes frequently, by way of a change of diet; and all grain that is given them, if poſſible, ſhould be bruiſed in a mill, or otherwiſe, for the reaſons already mentioned; this would not only be a ſaving of grain, but attended with conſiderable advantage in other reſpects. Too new grain of any kind ſhould never be given to horſes that are employed in active exerciſes, as they produce the ſame effect as new hay; they fill the veſſels with crude watery chyle, which diſpoſes horſes to ſweat much; and hence it weakens them conſiderably. New grain likewiſe frequently occaſions a ſevere looſeneſs, which renders horſes unfit for the taſk that may be required of them; or, if the grain, at the ſame time, chance to be bad of its kind, the diarrhoea continues with ſuch ſeverity, that it proves fatal; of which we have too many inſtances, although it is not commonly attended to.

I have already hinted, that horſes that are fed long on hard dry food are apt to become too coſtive. This ſhould be particularly attended to, and guarded againſt, as its conſequences are dangerous, not only in cauſing obſtructions in the bowels, but occaſioning a ſtoppage of urine, from too great a quantity of hardened dung lying in the rectum, and preſſing upon the neck of the bladder. This complaint, like moſt diſeaſes to which horſes are libale, is eaſier prevented than cured, by giving maſhes of bran, boiled barley, or malt, once a week, or oftener, if found neceſſary, by way of prevention.

Out of many caſes of this kind which I have known, I ſhall only mention the following: A horſe in this neighbourhood had been neglected in this reſpect. He was ſeized with griping pains, and was treated in a very abſurd manner, by giving him ardent ſpirits, aromatic powders, and pepper*. It was at laſt diſcovered that he had not had any ny paſſage, either by dung or urine, for ſome time. After he was racked *, he ſtaled plentifully, but the griping pains ſtill continued. Emollient injections were then propoſed, but too late to give him any relief. Upon opening his body, a very large quantity of hardened dung was found in the inteſtines; the latter of which were of a black livid colour.

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* A practice but too much in uſe in ſuch caſes, and which cannot be too ſeverely cenſured.

Hay that is given to ſuch horſes as are employed in active exerciſes, as I have formerly obſerved, ſhould always be of the beſt quality, well flavoured, and well got in. Small quantities at a time, ſhaked free from duſt, ſhould be put into their racks through the day; and, when they cannot go abroad, as in bad weather, to exerciſe, they ſhould be tied up to the rack for ſome hours, or a bundle of clean wheat

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* An operation eaſily performed on horſes. After the hand and arm are greaſed or oiled, the hand is introduced into the rectum, and the hardened dung taken out by degrees.

wheat ſtraw ſhould be laid before them, which will amuſe them. There is no danger of their eating too much of it: On the contrary, it will be of great ſervice to them. Horſes ſhould always have their ſtated times of faſting, as well as that of feeding. The keenneſs of their appetite for hay ſhould always diſcover itſelf by the ſame eagerneſs which they ſhow for their oats.

Many people are of opinion that hay cannot be too old for ſuch horſes as are employed in active exerciſes. I ſhall only obſerve, that hay, although kept in the beſt manner, like all other herbs and vegetables, will retain its juices and flavour for a cerain time only; after which, it loſes both, becomes dry and inſipid, and of courſe is endered unfit for nouriſhing an animal body. Beſides, as it requires a great ſupply of ſaliva from the mouth and jaws to moiſten it for ſwallowing, which creates hirſt, horſes are not fond of feeding upon it; neither do they care to eat much of it without drinking water frequently, which, in the above caſes, would be very improper for them.

The beſt argument that can be uſed in favour of old hay, for horſes that are employed in active exerciſes, is, that they cannot, for the reaſons already mentioned, eat too much of it, and having, at the ſame time, a good allowance of grain. Hence they are found to be in a proper ſtate for ſuch exerciſes, becauſe their ſtomachs are not oppreſſed with too much fodder, nor their bowels loaded with undigeſted food. This is what I have all along been contending for, and ſhows the propriety of giving horſes a very ſmall allowance of fodder at one time, even of the very beſt quality.

It has formerly been obſerved, of the Arabian and other foreign horſes, who are very fleet, and are able to undergo incredible fatigue, that they are allowed but a very ſcrimp allowance of fodder, which is barley ſtraw; that they are fed moſtly with barley; and that their bodies are rather meagre than fat; which is the beſt ſtate or habit of body for active exerciſes of any kind.

By feeding horſes according to the method here recommended, the ſtomach will be free from that oppreſſion which always attends too great a fulneſs, and, at the ſame time, retain its full ſtrength, to exert its digeſtive powers, ſo as to produce the moſt wholeſome and nouriſhing chyle; and hence the body will be healthful, active, vigorous, and fit for the moſt violent exerciſes.

CHAP. III.

OF WATER.

A SEPARATE chapter on water for the drink of horſes, may, at firſt view, appear unneceſſary; but, when it is conſidered that ſome of the diſeaſes they are liable to may originate from the conſtant uſe of unwholeſome waters, it is apprehended ſome remarks on the different qualities of freſh water may be of uſe. It is likewiſe of importance, in the management of horſes, to caution againſt indulging them in drinking cold water of any kind, in certain ſituations and circumſtances, as they are guided entirely by appetite, the gratification of which, on certain occaſions, may prove fatal to them; although horſes at liberty in the fields are in no danger, in this reſpect, at any time, nor in any ſeaſon.

Water is the main diluter of the food and fluids in general. It likewiſe becomes the vehicle of all nouriſhment to animal bodies. On that account, we cannot be too anxious about its qualities, nor delicate in our choice of it, either for our own uſe, or that of our horſes, as it partakes of the qualities of thoſe bodies it paſſes through, whether they are metallic, ſaline, or earthy, &c. theſe foreign matters mixing with the fluids of an animal body, according to their different gravity, and the capacity of the canals through which they circulate, will be, by the laws of motion, depoſited on one part or other of the body.

As a conſiderable proportion of water enters into the compoſition of animal fluids, it likewiſe bears a conſiderable proportion in thoſe that are ſecreted. A large quantity of water being thus diffuſed thro' the whole maſs of fluids in the body, adds to its fluidity. Hence it will be obvious that conſtant and frequent ſupplies of water are not only neceſſary to dilute the food in the ſtomach, but the maſs of fluids in general, as they, even in the moſt healthy ſtate, have a conſtant tendency to putrefaction, and require conſtant ſupplies both of food and drink, to keep them ſound and ſweet.

Phyſicians, who have ſearched into the cauſes of diſeaſes in the human body, alledge that ſome of the moſt obſtinate chronic diſeaſes proceed, in a great meaſure, from the uſe of unwholeſome waters; and, by comparing the different ſtrata of earth through which water paſſes about populous cities, they affirm that, where the water is bad, thoſe diſeaſes prevail moſt. It is likewiſe thought that graveliſh complaints may be owing to the ſame cauſe. In like manner, water which contains mineral bodies, and nitrous ſalts, is thought to enlarge the glands of the throat and jaws; and hence it is ſaid that the inhabitants about the Alps, &c. where the waters abound much with theſe qualities, are much diſpoſed to this diſorder, inſomuch that ſcarce any who live in ſuch ſituations are exempted from this inconvenience.

It would appear that thoſe waters which are moſt unwholeſome are not digeſtible, or that they do not aſſimilate or mix intimately with the fluids; and hence they prove the ſource of calculous concretions, and hard ſwellings, in different parts of the body.

Thus, we find that the effects of unwholeſome waters upon the human body are great; and, if the diſeaſes of animals, particularly thoſe of horſes, were thoroughly inveſtigated, it is more than probable that they would be found equally hurtful to horſes; for it is certain that they are ſubject to diſeaſes which, in many reſpects, reſemble thoſe of the human body. We likewiſe find, upon diſſecting their bodies, that they are ſubject to calculous concretions, and hard tumours, in different organs, and which may originate from unwholeſome waters.

Although there are no caſes upon record, in books of farriery, aſcertaining the exiſtence of ſtones being found in the bladder of horſes, equal in ſize to thoſe that are found in the human body, yet, from a variety of ſymptoms that I have obſerved about horſes, and the frequent attacks they are liable to, of a ſuppreſſion of urine, together with the great difficulty ſome horſes have at times in making water, I have always thought there was reaſon to believe that many of them labour under this diſorder in a greater or leſſer degree; but I have now the moſt undoubted proofs that horſes are ſubject to calculi or ſtones in the bladder, as I have ſeveral of them in my poſſeſſion that were taken out of the bladders of different horſes after they were dead. Some of theſe ſtones are of a conſiderable ſize, and weigh ten ounces; others of a ſmaller ſize, which, from their concave ſides, and other appearances, evidently ſhow that there was a number of them in one bladder at the ſame time, as they have the ſame figure and ſhape that a number of clay-balls would have when preſſed together. That they have ſtones in their kidneys is very well known. The ſame is obſerved in the kidneys of ſheep and oxen. It is likewiſe well known that ſome horſes paſs a conſiderable quantity of gravel with their urine, and that they are ſubject to graveliſh complaints. Hence it may be inferred, that, as the food of horſes is exceedingly ſimple and uniform, that the calculous concretions that are formed in the urinary paſſages, and in the bladder, may proceed from the water they drink.

Dr Bracken, in his ſecond volume of Farriery Improved, when treating of the gravel, (page 229.), ſeems to be of this opinion. He ſays. "But the greateſt cauſe of it (in my thoughts) is owing to their drinking ſuch waters as, by running through various ſtrata of earth, are impregnated with ſtony particles. In ſhort, whatever can bring on an accumulation of earthy, or rather *tartareous matter*, in the urinary paſſages, whether by obſtructing or leſſening the capacity of the canals, or by immediately or remotely producing the ſubſtance itſelf, will cauſe gravel, and in time the ſtone.'

It has frequently been obſerved, that horſes do not thrive on changing from one part of the country to another, although their treatment, in every reſpect, be the ſame, the difference of water excepted.

This perhaps may, in a great meaſure, be owing to the quality of the water they drink, and which may be poſſeſſed of different qualities from that to which they had been accuſtomed. This is particularly obſerved in thoſe places where the ſtable-yards are ſupplied from pit-wells, ſome of which are very deep, and the water very hard, which occaſions that chillneſs, trembling, and ſhaking, which frequently is obſerved in horſes, when they drink it immediately after it is newly pumped, and which cauſes their coats to *ſtare*, and ſtand on end, for a conſiderable time, and ſometimes they are griped, and ſeem greatly out of order.

Spring-water is liable to partake of all the metalline or mineral ſtrata through which it paſſes. Hence it becomes noxious or ſalutary, according to the nature of thoſe ſubſtances with which it has been in contact.

River-water has likewiſe its different qualities from the various ſoils through which it travels; but, in general, it is much ſofter than water that runs under ground, and therefore much fitter for uſe.

Well or pit-water is ſubject to all the inconveniencies of ſpring-water, with this additional circumſtance, that it is generally hard, and, by ſtagnating long in the well, it may there take up from the bed it lies upon ſuch particles as may render it more unwholeſome; therefore the goodneſs of all well or pit-water is to be doubted, and particularly that which is taken from very deep wells.

Pond-water, under which head may be included all ſtagnant-waters, which generally proceed from rain. Where it lies on a clean or a clay bottom, and is freſh, it anſwers very well for cattle of all kinds; but, in warm weather, it is apt to corrupt and ferment, which renders it unwholeſome and makes ſuch waters the moſt uncleanly and diſagreeable of any.

Upon the whole, thoſe waters that are lighteſt, and readily break ſoap, are the beſt, as they eaſily digeſt and aſſimilate with the fluids of an animal body, and therefore are the fitteſt to be uſed for drink.

To correct the hardneſs of pit-water, and render it more ſalutary for horſes to drink, it ſhould be pumped into a large trough, and expoſed to the open air for ſome time before it is uſed; or, if a cart-load or two of clay or chalk were thrown into the well, it would greatly improve the water. It has likewiſe been found, that breaking down a piece of clay, about the bigneſs of an apple, in a pailful of hard water, before it is given to horſes for drink, morning and evening, that it produced a conſiderable change on the *coats* of horſes to the better; for it will be found that, where horſes are obliged to drink hard water, they are, for the moſt part, rough haired, and, at the ſame time, they will have a great deal of duſty matter at the roots of it, even although they ſhould be well curried, and bruſhed frequently in the day; which plainly ſhows that there is ſome obſtruction in the pores of the ſkin, which prevents the natural perſpiration, and, of courſe, that gloſſy ſhining appearance of the hair, which is obſerved in all horſes who perſpire freely, through the pores on the ſurface of the body. Hence it would appear that this cutaneous obſtruction proceeds from the conſtant drinking of hard or bad water.

Water that runs through lime-ſtone, although expoſed to the open air in large ponds, will retain its hardneſs, and produce all the effects above mentioned on horſes that drink it conſtantly. This was obſerved at a nobleman's ſeat in this neighbourhood. On mentioning the above circumſtance accidentally to a great breeder of cattle from the north of England, he adviſed the nobleman to throw ſome cart-loads of clay into the pond, which produced a conſiderable change on the water to the better.

When water in pit-wells is rendered impure, from ſtagnating too long, without being drawn off by pumping, or when it has acquired any bad ſmell, by impure water getting into it, or full of animalcula or ſmall earth-worms, by throwing into the well a few ſhovels full of burnt lime, it will become pure and ſweet.

Horſes have a delicate taſte and ſmell, and are very nice in the choice, both of what they eat and what they drink; of courſe, they ſhun, when it is in their power, every thing that is diſagreeable to either. But, when they are long reſtricted from drinking water, they will, in that caſe, offend their taſte, to gratify thirſt.

This is evident from their readily drinking water ſtrongly impregnated with nitre, or with quick-lime, in certain caſes, when given as a medicine. But this reſtriction ought never to be laid on horſes, more eſpecially when they are labouring under any inflammatory diſeaſes; as, in ſuch caſes, they cannot drink too much, in order to dilute their blood, and promote the natural ſecretions; but it too frequently happens, through miſmanagement, that they are forced, from neceſſity, to drink water which they loath, and that very ſparingly; when, at the ſame time, if given them in a proper manner, and of a proper temperature, it might prove, in many caſes, the beſt medicine they could get.

Horſes ſhould never be ſuffered to drink too much cold water at one time. If they ſhould exceed in this, it ſhows that they have been neglected in this reſpect; for, if they had always water at command, they would drink often, but never too much at once. For this reaſon, water ſhould be offered them frequently, but not in too great a quantity. Neither ſhould they be allowed to drink much water when they are going to perform any active exerciſes.

It is very refreſhing to horſes to allow them to waſh their mouths and throat by a glut or two of water, after performing any ſevere exerciſes; but they ought, on no account, to be indulged in drinking a quantity of cold water when they are overheated. This ſhould be particularly guarded againſt, as the conſequences are dangerous, and frequently prove fatal to them; for, when a quantity of cold water is taken into the ſtomach in this heated ſtate, when its veſſels are full, and diſtended with blood, a ſtagnation of the blood in theſe veſſels takes place, a mortification follows, and death enſues; therefore, when a horſe has been overheated, from exerciſe, &c. ſmall quantities of water ſhould be given him at a time in a pail, but not till he appears to be thoroughly cool; and, in very cold weather, the chill may be taken off, by mixing the water with that which is a little heated. In theſe caſes, it is likewiſe of ſervice to put ſome oat-meal in the water, or bran.

It is a common practice to ride horſes pretty hard after they drink water, in order (as the phraſe is) *to warm it in the horſe's belly*. Walking, or trotting gently, may be of uſe, but any quicker motion, in this caſe, is extremely hurtful. In traveling, towards the end of a ſtage, if a horſe is not too warm, it is very proper, if an opportunity offers, to give him a little water, but by no means to ſuffer him to drink too much.

CHAP. III.

OF EXERCISE.

BY Exerciſe I mean only in regard to ſuch horſes as are allowed to ſtand too much at reſt in the ſtable, and at the ſame time are full fed, and breathe conſtantly a hot foul ſtagnated air in cloſe ſtables; the whole of what is here advanced being calculated to promote the health and ſoundneſs of horſes, by recommending ſuch precepts as may contribute to preſerve them in a proper habit of body, and render them fit for active exerciſes, in order that they may perform them with eaſe and freedom to themſelves, and with pleaſure to their owners. At the ſame time, it will ſhow how much it is the intereſt of thoſe who keep horſes, and wiſh to have them in health, &c. to attend particularly to this important article.

It will perhaps appear ſtrange at firſt view, to aſſert that a much greater number of horſes who are high fed, and ſtand much at reſt in cloſe warm ſtables, die of diſeaſes which are brought on them from the want of regular exerciſe, eſpecially in great towns, than from any other claſs of diſeaſes to which they are liable.

Horſes are formed for labour. Inactivity renders them unfit for it; and, at the ſame time, it is hurtful to their health, in a variety of reſpects.

Inactivity, with full feeding, renders the body dull and ſluggiſh. The ſtomach is loaded with food, which it cannot properly digeſt. The food is detained too long in the bowels. Hence indigeſtion, coſtiveneſs, and flatulencies. The inteſtines, in this loaded ſtate, preſs upon the ſurrounding viſcera, and obſtruct the circulation of the different fluids in them. The liver, meſentery, and ſpleen, are expoſed to be injured from this cauſe; their natural functions are impeded; the animal oeconomy is diſturbed; and, when this is the caſe, the conſtitution muſt be injured, and diſeaſes enſue. The natural ſecretions are not in due quantity; they, together with the perſpiration, are retained in the body, and are abſorbed or taken up again into the maſs of humours. And hence ariſes another ſource of diſeaſe. The circulation of the blood, through the whole ſyſtem, is ſlow and languid. Hence the humours or juices are not properly prepared; glandular obſtructions are formed in different organs of the body; the *ſheath* and legs ſwell; running ſores take place in the latter, commonly called *greaſe*; and the whole maſs of fluids are greatly diſpoſed to putrefaction; diſeaſes follow, and death frequently concludes the ſcene.

On the other hand, conſtant and habitual exerciſe renders the body ſtrong and active, and, at the ſame time, fit for the moſt violent exerciſes. All animals, when left to themſelves, are directed by natural inſtinct to uſe exerciſe. Young animals, in particular, ſhow a ſtrong propenſity to it; and the very nature and conſtitution of a horſe requires a conſiderable proportion of exerciſe at all times of life.

Exerciſe acts as an aſſiſtant to the heart, in promoting a free circulation of the blood and juices through every part of the body. It creates an appetite, and promotes digeſtion, and thereby greatly aſſiſts in converting the food to nouriſhment. It promotes all the ſecretions and excretions, which enlivens the body, and gives room for freſh ſupplies of nouriſhment; it invigorates the whole ſyſtem ; it gives a flow of ſpirits, and adds firmneſs and ſtrength to the muſcles and ſinews. In ſhort, without a certain proportion of exerciſe, no animal body can enjoy health.

The motion of the body, or what is called muſcular motion, cauſes the blood and juices to circulate freely through every part. As this motion continues or increaſes, the breathing becomes quicker and ſhorter, and the perſpiration is forced out at the pores of the ſkin. The ſweat then becomes viſible on the ſurface of the body, in the form of ſteams, like ſmoke. The wetneſs on the ſkin ſometimes reſembles froth, and is ſometimes thin and watery, according to the habit of body the horſe is in at the time. The ſweat of a fat horſe is always clammy, and of a frothy appearance ; that of a thin meagre habit, when in good condition for exerciſe, is thin and watery.

It has already been hinted, that the conſtant and habitual uſe of exerciſe, or labour, increaſes the firmneſs of the muſcular fibres, which being thereby more cloſely compacted, the ſerous or watery parts of the fluids are more expreſſed from their interſtices, by which they acquire a degree of rigidity, that cauſes, as it were, a dryneſs of the whole muſcular parts. Hence the difference is very viſible to the eye, between the firmneſs of the fleſh of poſt, running, and hunting horſes, and thoſe that are fat, and little uſed to labour or exerciſe.

The effects of exerciſe to horſes are not only beneficial to their health, but, at the ſame time, it keeps them in that condition which is neceſſary to preſerve them in proper order for performing the various labours which may be required of them. Beſides, in many caſes of beginning diſorders, its good effects ſoon become viſible, when it is uſed as a medicine, in thoſe horſes who have ſwelled legs, &c. from ſtanding idle in the ſtable. For, altho' ſuch horſes may have been declared full of *humours*, and that nothing could relieve them from theſe ſuppoſed humours but purging, diuretic, or alterative medicines, yet, it has been frequently found, that regular exerciſe, frequent rubbing of the legs, with a roomy ſtall to ſtretch their legs when they lie down, have removed theſe complaints, without any medicine whatever.

It has already been obſerved, that, in great towns, moſt horſes that are kept there are much injured for want of regular exerciſe. They ſtand in the ſtable, pampered to the full with the richeſt food, for days, nay even for weeks together, without going any farther than the water, and frequently even that is carried to them. Hence their ſtomachs are filled and overloaded with groſs food. This produces a crude indigeſted chyle, which vitiates the blood, and diſpoſes it to diſeaſe. Rides, or covered ſhades, for exerciſing horſes in all weathers, are extremely uſeful; and no ſtable yard, in large towns, ſhould be without them; although, at the ſame time, the open air is preferable to too cloſe ſhades, or riding-houſes.

I remember to have ſomewhere read of a fact that ſeemed to have all the marks of authenticity, and which is applicable to the preſent ſubject, the ſubſtance of which is as follows: The governour of a fortreſs on the continent having been unexpectedly ſhut up in his garriſon by the enemy, at a time when he had admitted a conſiderable body of cavalry of his own party on their march. In ſuch a ſituation, the cavalry were looked upon as loſt; but, to the amazement of thoſe who ſaw them when the ſiege was raiſed, they were not only in health, but in excellent order, and fit for the moſt active exerciſes. The method which the governour ordered them to be treated was thus: As he had no room to exerciſe them but in the ſtable, which was bomb proof, he ordered three men at a time to each horſe; one to get on his back, the other two were ſtationed on each ſide behind him, with long whips in their hands; they were ordered to make the horſe ſtir about from ſide to ſide, till ſuch time as he was covered with ſweat; the men, when tired, were ſucceeded by others. Others again were ordered to rub the horſe down till he was quite dry. This manoeuvre was repeated every day, which afforded exerciſe both to the men and horſes, and preſerved both from thoſe diſeaſes which ariſe from inactivity.

From what has been ſaid, it will appear how ſalutary, and even neceſſary, regular exerciſe is in preſerving horſes in health. From the ſame reaſoning, it likewiſe may be inferred, that they ſhould be accuſtomed to labour and active exerciſes by degrees; for all ſudden changes, whether from idleneſs to active exerciſes, or from theſe exerciſes to idleneſs, produce conſiderable changes in the ſyſtem, and render both the ſolids and fluids liable to diſeaſe. This we experience from our own feelings. When a man, who has not been accuſtomed to undergo much fatigue performs any violent exerciſe or labour of any kind, by which he has been overheated and fatigued, while he is warm he feels no complaints; but, when he cools, he will feel himſelf ſtiff, and all over pained in the muſcular parts; but, if he perſeveres in the daily uſe of the ſame exerciſe or labour, it becomes at laſt familiar to him, ſo that he can perform theſe exerciſes with eaſe to himſelf, and at the ſame time he will be free from thoſe pains in the muſcular parts which were at firſt occaſioned by exertions to which they had not been accuſtomed. It is the ſame with horſes, on their being firſt ſet to hard labour, or violent exerciſes, although they cannot expreſs their feelings; yet the ſtiff contracted ſteps, obſerved upon moving them about after a hard day's work, fairly diſcover that this is the caſe with them. Accuſtom them regularly to the habitual practice of theſe exerciſes or labour, it then becomes eaſy to them, without any ſtiffneſs or difficulty of breathing following from it. Hence, when a horſe has arrived at this ſtate, or habit of body, he is then ſaid, in the ſtable phraſe, to be *in wind*.

But one great ſource of diſeaſe in horſes ariſes from the improper treatment of them after they have been overheated by exerciſe or hard labour. This, one would naturally think, ſhould occur to every man from his own feelings; but this is not the caſe; there are many ſtable people of ſuch a particular way of thinking, that, although a horſe ſhould be all over wet, and ſmoking with ſweat, ſtill they will inſiſt, according to their own way of expreſſing themſelves, that he is not heated *at the heart*, and expoſe him to the cold air uncovered, tied at the ſtable-door, and even allow him to drink his belly full of cold water in this heated condition. It would fill a volume to enumerate the many caſes that have occurred

curred where this treatment has proved fatal to horſes.

When a horſe grows warm from violent exerciſe, the velocity of the blood, &c. as I have already ſaid, is then greatly increaſed, by which the ſmaller veſſels are dilated, and admit of the groſſer fluids, which do not uſually circulate in them. This is evident when a horſe has been hard rode, from the redneſs of the white of the eye, the veſſels of which admitting the red blood into them. There are likewiſe a number of ſmall blood veſſels, which may be obſerved on the ſurface of the ſkin, that are not viſible when a horſe is cool, and at reſt. All theſe circumſtances plainly ſhow the rapidity of the circulation during the time of violent exerciſe. When the horſe is properly taken care of, and allowed to cool gradually, the celerity of the blood, &c. abates, the veſſels contract, and repel theſe groſſer fluids back into the larger veſſels, and, by degrees, the fluids return to their former courſe and place. But, if the body is ſuffered to ſtand ſtill, expoſed to cold air, or if the horſe is ſuffered to drink cold water, the veſſels, contracting ſuddenly by the cold, (whether it is applied to the internal organs, as the ſtomach or lungs, or to the external ſurface of the body), retain the groſſer fluids that have entered them. Hence, in the former caſes, violent inflammations, gangrene, and, of courſe, ſudden death. In the latter, all the diſeaſes that are conſequent upon obſtructed perſpiration. Caſes of this kind frequently happen to the human body, when thoſe who are overheated are ſo imprudent as to expoſe themſelves to cold air, or to drink cold liquors. Death is too frequently the conſequence, or they are ſeized with the moſt violent and acute diſeaſes.

Van Swieten, in his Commentary, (Vol. I. page 341.) records the caſe of Alexander the Great, who, “ when covered with “ ſweat and duſt, went into the Cydnus to “ waſh himſelf, in a very hot country, and

" the hotteſt time of the day; as ſoon as
" he entered the water, his limbs grew ſtiff
" on a ſudden, and he turned pale all over,
" and the vital heat forſook almoſt every
" part of his body. His ſervants received
" him like a dying man, and carried him,
" ſcarce ſenſible, to his tent. So ſuddenly
" was his ſtrength deſtroyed, young and
" hardened as he was by warlike toils; a
" violent diſeaſe immediately ſeized him,
" who was perfectly well before, from
" which he very difficultly eſcaped, by the
" ſkill and fidelity of Philip his phyſician."

Such are the conſequences ariſing from the imprudent expoſure of the bodies either of a man or a horſe to too great a degree of ſudden cold, whether it be applied to the ſtomach in drinking cold water, or to the external parts of the body, when overheated; of which a great variety of caſes might be mentioned, which have occurred to both, and which is confirmed by obſervation. For every ſummer produces freſh inſtances of diſeaſes and death to individuals, from going into the water to bathe when the body is overheated; and every day produces the ſame inſtances in horſes, as they, when travelling or hunting, are obliged to go through waters that lie in their way: For which reaſon, every one who has a regard for his horſe ſhould, if poſſible, endeavour to ſhun it, and go to where the water is leſs deep, or to a bridge, although it may be at a conſiderable diſtance; as plunging a horſe, when overheated, into cold water, not only endangers his life from the moſt violent acute diſeaſes; or, if he ſhould ſurvive the ſhock, it occaſions the moſt obſtinate chronic complaints in the cheſt, legs, and feet, which may render him uſeleſs.

Although a certain degree of exerciſe be abſolutely neceſſary for the health of ſuch horſes as ſtand much at reſt in the ſtable, with too full feeding, yet it may be obſerved, that, like many other things relating to horſes, it may be carried to exceſs, and may prove more hurtful than beneficial; therefore, the time and manner of regulating it deſerves attention. Thus, it would be imprudent to cauſe a horſe exert himſelf too ſuddenly after he is newly fed and watered, becauſe his ſtomach is then too full. They ſhould be moved ſlowly and gently at firſt ſetting out. They will naturally mend their pace of themſelves. Their exerciſe ſhould be continued in proportion to their ſtrength, manner of feeding, and the labour, &c. required of them; and this ſhould be repeated every day when it is practicable, and the horſes not otherwiſe employed; increaſing their exerciſe as circumſtances may require. From not attending to the above precautions in exerciſing horſes, how many caſes of broken wind, and other aſthmatic complaints, might be referred to ſuch cauſes?

It is likewiſe improper to take out horſes to exerciſe in wet or rain, or when they are not able to bear it, either from former fatigue, from hard labour, or when they are ſick or lame.

But the greateſt caution is neceſſary to be obſerved with horſes that are very fat. They require a long courſe of very moderate and regular exerciſe before they can, with ſafety, be put to that which is the leaſt violent. Their fat, by the exceſſive heat their bodies acquire by violent exerciſe, is melted, as it were, into oil, and carried into the blood, when it cauſes what is called an *oily plethora*, which produces the moſt violent and ſudden inflammations in the lungs, &c. The viſcidity of the oily matter obſtructing the veſſels, and preventing the other fluids from paſſing through them, frequently occaſions ſudden death; many inſtances of which I have known, particularly in thoſe horſes that have been fed with a great deal of boiled meat, in order to fatten them for ſale. Thus, a pair of ſtrong heavy carriage horſes were once offered me for ſale. I declined purchaſing them, on account of their extreme fatneſs, which was thought very ſingular. A gentleman in the neighbourhood, who was not ſo ſcrupulous, purchaſed them. They were conſtantly and regularly exerciſed with the greateſt care and attention for a conſiderable time, in order to reduce their bodies, and bring them into a proper condition for work. After this had been continued for ſome weeks, they had occaſion to travel pretty ſmartly a very ſhort ſtage of ſeven miles out and home, which finiſhed one of them after a ſhort illneſs. This, and a variety of ſimilar caſes, which will readily occur to every one who is acquainted with horſes, may ſerve to ſhow the danger of putting thoſe that are too fat and full of juices, too ſuddenly on violent exerciſes of any kind; for, as I have frequently hinted, there is no ſtate or habit of body a horſe can be in, more dangerous, or more liable to diſeaſe, or that runs greater hazard, when attacked with diſeaſe, than that of being too fat.

Thus I have endeavoured to ſhow the advantages that ariſe to horſes from the conſtant habit of moderate exerciſe. It perhaps may be of uſe to purſue this ſubject a little farther, and conſider the effects it produces when carried to exceſs, and the conſequences that follow from it, on horſes being too ſuddenly expoſed to cold air, or plunged in cold water.

It has been obſerved in animals that have been hard hunted before they are killed, that, upon taking off the ſkin, the whole *panniculus adipoſis*, and even the muſcular parts, have been found almoſt black, from the blood being extravaſated under the ſkin, or by the extreme heat of the body, together with the velocity of the circulating fluid, and that the blood has been forced into thoſe veſſels in which it does not commonly circulate. The ſame appearance I have obſerved in horſes, particularly one that ſuddenly fell down dead in a race on coming up to the ſtarting poſt the laſt heat.

When they were taking off his ſkin, the blood appeared as if it had been extravaſated between the fleſh and the ſkin, and run down in a conſiderable quantity, as the horſe was then hardly cold. It is likewiſe obſerved in cattle that are drove too hard, immediately before they are ſlaughtered, that the blood is too much mixed with the fleſh, &c. All theſe circumſtances demonſtrate, that, in violent exerciſes, the blood is forced by the rapidity of the circulation, and extreme heat of the body, into veſſels in which it does not circulate in the ordinary courſe of circulation. Whilſt the body is in this heated ſtate, if cold water is thrown upon it, or the horſe plunged into cold water, or too great and ſudden a degree of cold in any ſhape applied to the body, the fluids, as I have formerly hinted, are retained there, by the veſſels contracting ſuddenly; and, as theſe extravaſated fluids cannot ſo ſpeedily be abſorbed, or taken up by the abſorbent veſſels, and conveyed into the circulating maſs, they may then be ſaid to be in a ſtate of ſtagnation. Hence inflammation, gangrene, and mortification, follow.

This may be further illuſtrated by conſidering the manner in which horſes are affected in that diſorder which is commonly termed a *founder*, the ſymptoms that take place in the different ſtages of the diſorder, and the circumſtances that appear on diſſecting thoſe who have died of it. As this diſorder always proceeds from cold too ſuddenly applied to the body, whether it be from a current of cold air, or from plunging the body into cold water, when overheated, the effects are the ſame. The ſymptoms at firſt are theſe, when the horſe begins to cool, he appears very ſtiff and feeble in his fore quarters, and, when forced to move forwards, he collects his body, as it were, into a heap, and brings his hind feet as far forward under his body as he poſſibly can, in order to remove the preſſure of the weight of his body from the fore legs and feet; at the ſame time, he ſets his fore feet to the ground with ſeeming great pain; his fore parts are extremely hot, the legs conſiderably ſwelled, and evidently painful to the animal when touched; a violent fever ſucceeds, which, if not properly treated, terminates in death, or, if the horſe ſurvives the ſhock, in incurable lameneſs. On diſſecting the legs and ſhoulders of thoſe horſes who have died in a few days illneſs of this diſorder, the blood is generally found extravaſated, as mentioned above, the parts having a black appearance, eſpecially between the ſkin and the fleſh. The ſame blackneſs is likewiſe obſerved in the cellular membranes between the interſtices of the muſcles and tendons, the texture of the veſſels are deſtroyed and mortified. The following caſe was communicated to me by a very judicious farrier in London. A gentleman, being 18 miles diſtant from London, was anxious to be in town before it was dark. He rode his horſe very hard through a deep ſnow, during a ſevere froſt. When the horſe was *ſuppered up* after being well rubbed over, he lay down, and was found in the ſame ſituation next morning, but unable to riſe, or ſtand when up. On the third day, both his fore hoofs fell off. This was a founder of the very worſt kind. The exceſſive coldneſs of the ſnow, to which his hoofs and legs had been ſo long expoſed, when they were overheated, produced the effects above related in the caſe of *founder*. The violence of the inflammation that had taken place within the hoof had deſtroyed the texture of the veſſels, &c. Hence, all manner of connection between the hoof and internal parts of the foot being deſtroyed, they became looſe, and fell off. The ſame effects happen in the human body; when a violent inflammation takes place about the ends of the fingers or toes, the nails come off.

Plunging horſes in cold water, when they are overheated, has the effect to weaken them, as would appear from the following obſervation, communicated to me by a gentleman who is a great ſportſman, and at the ſame time is well ſkilled and acquainted with horſes, "That, in hunting, "when they are overheated, and obliged "to go through deep waters, eſpecially if "they are obliged to ſwim, they ſoon after become faint, jaded, and tired."

It may be urged by ſome people, that they have known horſes plunged into cold water, when they were overheated, and likewiſe expoſed to the inclemency of the coldeſt weather, without any ſuch bad conſequences following from it. This will readily be granted. I would again aſk, How comes it that one man is ſeized with a diſeaſe, whilſt another, in the ſame circumſtance, place, and ſituation, eſcapes it? The anſwer to both is obvious. It depends on certain circumſtances of habit of body either may be in at the time. Thus, it frequently happens, that two horſes yoked to a poſt chaiſe, the one a veteran hardened by labour, &c. the other a freſh horſe, when overheated on the road, and obliged to go through deep waters, the veteran ſhall be affected with the diſeaſe termed a *founder*, whilſt the other is not; although it more frequently happens that young, or freſh horſes, are much more liable to be injured from ſuch treatment.

As the diſeaſes which ariſe from obſtructed perſpiration are ſometimes rapid in their progreſs, a few general remarks on ſome of the moſt prevailing, or moſt dangerous, may be uſeful in this place, as it may be preſumed that horſes generally are more expoſed to catch ſuch diſorders after they have been overheated, more eſpecially when they are improperly treated, or neglected.

It has been formerly obſerved, that, when the body is overheated by active exerciſes or violent labour, the circulation of the blood, &c. is carried on through the veſſels with uncommon rapidity; of courſe, the reſpiration, or breathing, becomes more laborious,

borious, and more frequently repeated; at the ſame time the perſpiration, from the pores of the ſkin, is conſiderably increaſed on the ſurface of the body, in the form of humid ſteams like ſmoke, and ſometimes ſo profuſe as to run down the ſkin, as if water had been poured on the body.

As this perſpirable matter is very liable to be ſuddenly checked by cold, (in whatever manner it is applied, whether by a current of cold air, or water thrown upon the body, or horſes plunged into it), and retained in the body, it then occaſions a number and variety of diſeaſes, which either affect the ſyſtem in general, as in fevers, or when more local, and affecting the muſcles, it produces rheumatiſm in the ſhoulders, neck, and legs; hence ſtiffneſs and lameneſs. When it affects any of the internal organs, as the bowels, it occaſions colic pains, diarrhoea, or looſeneſs; when it ſettles on the lungs, it produces coughs, catarrhs,

tarrhs, peripneumony, or inflammation of the part, followed by conſumption, &c. When on the membrane called the *pleura*, which lines the cavity of the thorax, it occaſions the moſt violent pains or ſtitches, with difficulty of breathing, &c. When on the glands of the throat, ſwelling and inflammation, threatening a ſuffocation, and ſometimes ſuppuration of theſe glands. When on the trachea, or wind-pipe, or the pituitary membrane which lines the cavities of the head, diſorders peculiar to theſe parts. The latter of which deſerves particular attention.

As the pituitary membrane, which lines the inſide of the noſe and the cavities of the head, is now pretty generally known to be the ſeat of that diſeaſe in horſes called the *glanders*, and which was firſt diſcovered by M. la Foſſe, who is very juſtly entitled to the merit of it. He has at the ſame time pointed out the method of cure, when practicable, before the bones of the head become carious; of which Mr Bartlet, in his Gentleman's Farriery, p. 119. treats pretty fully. He has likewiſe given a plate for explaining the operation of the Trepan, as propoſed in the method of cure by M. la Foſſe: But, as Mr Bartlet has adopted an inaccuracy advanced by the former, which, if not corrected, would miſlead the young practitioner, I ſhall beg leave to mention it in this place, and point out the error. In p. 123. he ſays, "It is a "curious remark of our author, that the "ſublingual glands, or the kernels ſituated "under the jaw-bone, which are always "ſwelled in this diſtemper, do not diſ"charge their lymph into the mouth, as "in man, but into the noſtrils; and that "he conſtantly found their obſtruction "agreed with the diſcharge; if one gland "only was affected, then the horſe diſchar"ged from one noſtril only; but, if both "were, then the diſcharge was from both."

It is ſurpriſing that Mr Bartlet ſhould not have corrected M. la Foſſe in this anatomical error, of placing the ſublingual glands under the jaw-bone on the outſide, and miſtaking the ſubmaxillary glands for the ſublingual; for, if he had inſpected the head of a horſe, he would have found the ſublingual glands in their proper place, where their very name implies they ſhould be, that is, immediately under the tongue, as in the human body; he likewiſe might have traced their duct, or opening, to the two ſmall papillae that are ſituated on the inſide of the fore-teeth, under the point of the tongue, which demonſtrates that they diſcharge their lymph into the mouth, as in man: And, in all the diſſections I have made on glandered horſes, I never found theſe glands affected; but the ſubmaxillary glands that are ſituated between the jaw-bones on the outſide, are always more or leſs ſwelled, inflamed, or indurated, according to the length of time they have been affected, or the virulence of the diſeaſe; they likewiſe diſcharge their lymph into the mouth, as in the human body; and their being conſtantly ſwelled in glandered horſes, according as one or both ſides of the pituitary membrane is affected, may ariſe from the ſame cauſe which produces the ſwelling of the inguinal glands, in the groin of the human body, in a gonorrhoea, that is, from the abſorption of the virulent matter affecting them, and occaſioning that ſwelling, induration, &c. Hence it is evident, that the ſwelling of the ſubmaxillary glands in glandered horſes, and of the inguinal glands in the groin of the human body, in a gonorrhoea, are only ſymptoms of theſe diſorders.

The Count de Buffon, in his natural hiſtory of the horſe, vol. 3. p. 382, alledges, that this diſeaſe, called the *glanders*, proceeds from the horſe dipping, or ſinking, his noſe and mouth deep into cold water when he drinks. In comparing the manner of a horſe's drinking with that of the dog, he obſerves, that "the horſe, on the "contrary, whoſe mouth is too ſmall, and "whoſe tongue is too thick, and too ſhort, 'for forming a ſcoop, and who, beſides, 'drinks with more avidity than he eats, 'briſkly ſinks his mouth and noſe deep 'into the water, which he ſwallows plentifully by the ſimple motion of deglutition. But this obliges him to drink without drawing his breath; while the dog 'reſpires at his noſe during the time he is 'drinking. After running, when the reſpiration is ſhort and laborious, horſes 'ſhould be allowed to drink at leiſure, and 'to breathe as often as they incline. Neither ſhould they be permitted to drink 'water that is too cold; for, independent 'of the colics frequently occaſioned by 'very cold water, it often cools their noſe 'to ſuch a degree, as brings on rheums, 'and perhaps lays the foundation of the 'diſeaſe called *glanders*, the moſt obſtinate 'of all maladies to which this noble animal is ſubject. Beſides, thoſe travellers 'who give a detail of the diſeaſes of horſes in warm countries, alledge not that "the glanders is equally frequent in Ara-

" bia, Perſia, and Barbary, as in cold cli-
" mates. Hence I am led to conjecture,
" that this malady is owing to the ſuperior
" coldneſs of the water; becauſe theſe ani-
" mals are obliged to keep their noſes in
" the water a conſiderable time, which
" might be prevented by never allowing
" them to drink very cold water. Aſſes,
" which dread cold more than horſes, and
" reſemble them ſo greatly in their inter-
" nal ſtructure, are not equally ſubject to
" the glanders, which is owing, perhaps, to
" their drinking in a different manner from
" the horſe; for, inſtead of ſinking the
" noſe into the water, they barely touch it
" with their lips."

Although I cannot help differing in opinion from the Count in this reſpect, as I have known horſes affected with this diſorder who never had the cuſtom of dipping or ſinking their noſes deep into water when they were drinking; yet I agree with him on the general principles, that the cauſe of this diſorder may proceed from cold affecting the pituitary membrane which lines the cavities of the noſe, &c. for it generally may be traced to its very beginning, from ſome cold affecting the head, and which has either been ill treated, or totally neglected: Hence, therefore, it will be evident, that this diſorder, like many others to which horſes are liable, may be much eaſier prevented than cured, when once it has taken place: Hence the neceſſity of paying proper attention to recent colds, in keeping the head and throat warm, and not ſuffering the horſe to go abroad before he is thoroughly recovered, more eſpecially in very cold weather.

When the pituitary membrane is affected with a recent cold, the ſmall glands which are diſperſed throughout the ſame become tumified, inflamed, &c. and, in place of ſeparating a fine thin lymph like to pure water, which ſerves to lubricate and moiſten the paſſage of the noſe and cavities of the head, as in a healthy ſtate, they then diſcharge a thick viſcid mucus, known by the name of *ſnot*, which falls from the noſtrils, according as one or both noſtrils are affected. Though the diſeaſe at firſt is merely local; yet, when it increaſes by neglect, or otherwiſe, it ſpreads over the whole membrane which lines the cavities of the noſe, &c. The membrane becomes thickened, lax, and flabby; its ſmall glands become more or leſs ulcerated. Hence the quantity of mucus diſcharged from this large ſpace of membrane becomes very profuſe. The maxillary ſinuſes on each ſide of the noſe, (called the *antrums*) which are of a very particular ſtructure, being deep and hollow, reſembling a purſe with the opening on the upper part a little inclined to the paſſage of the noſe, one or both of theſe cavities, according as one or both ſides are affected, are ſoon filled with the mucus, where it is retained, and, from the heat of the parts, and its long retention, it acquires a more virulent corroding quality, which adds to the general diſorder. As the diſeaſe increaſes, the ſpongy bones in the head, of which there are ſeveral, become carious. The diſcharge then becomes extremely foetid, and of different colours, &c. the whole ſyſtem being affected by the abſorption of this corroding matter, the horſe becomes hectic. It then becomes neceſſary to put a period to his exiſtence.

On diſſecting the heads of ſuch horſes as have been affected with this diſorder, I have always found the pituitary membrane to be the ſeat of the diſeaſe, and the cavities formerly deſcribed filled with viſcid mucus. In the firſt ſtage of the diſorder it is of a mild bland quality, and of a white colour, without any particular ſmell. In the ſecond ſtage it becomes more ichorous, foetid, and diſcoloured. In the laſt ſtage it is of a moſt offenſive ſmell, and of a black yellowiſh colour, mixed with blood, the whole membrane being then turned into one continued ulcer, the ſpongy, and even the more ſolid bones become carious and rotten, all the cavities of the noſe, &c. may then be ſaid to be converted into one general maſs of corruption. I have been the more particular in deſcribing the general ſymptoms of this diſeaſe, together with the appearances on diſſection, as the hints here thrown out may be of uſe in leading to farther diſcoveries, either for preventing or curing this loathſome diſorder.

From what has been ſaid, it will be evident, that there can be no great hopes of curing this diſeaſe in the two laſt ſtages. I ſhall only obſerve at preſent, that when a cure is practicable, it can only take place in certain favourable circumſtances, and in the firſt ſtage of the diſorder, before the mucus acquires any ichorous or bad quality, or the bones become carious. It will ſtill be more favourable when the diſcharge of mucus is from one noſtril only. For the operation of the trepan, as recommended by M. la Foſſe, I muſt refer the reader to Mr Bartlet's deſcription of that operation, which is pretty accurate; only I would obſerve, that, he directs the thin bony partition immediately between the ſcull, where the lower trepan is made, and the bone which forms the bottom of the maxillary ſinus, where the mucus is lodged, to be perforated with a ſtiletto, or ſharp pointed iron: As this laſt operation is apt to make long fiſſures, cracks, or ſeams in that bone, by which means it becomes the more liable to be affected with the ichorous matter that is to paſs through the parts, and by becoming carious may protract the cure; it will therefore be more adviſeable to perforate this thin bony partition with a trepan of a ſmaller ſize, and then with another ſtill leſs to perforate the bottom of the ſinus. Hence it will be neceſſary to make three perforations with the trepan, before the mucus confined in the ſinus can be diſcharged, beſides, the opening in the frontal ſinus, which is made on purpoſe to ſyringe the cavities with proper injections.

Thus I have endeavoured to lay before the reader ſome of the general effects of a current of cold air, or cold water applied to the ſurface of the body of horſes when they are overheated. The effects of too much cold water being taken into the ſtomach at once have been already mentioned in the chapter on water. It remains now to make a very ſhort obſervation on too cold air being inſpired into the lungs, when they are much agitated from exerciſe, and the body conſiderably heated.

However dry and elaſtic the air may be that is drawn into the lungs of an animal body in reſpiration or breathing; yet, when it is diſcharged from them, it is evidently loaded with humid ſteams; at the ſame time it loſes conſiderably of its elaſtic quality. The moiſture that comes from the lungs evidently ſhows, that a very great portion of thin lymph, or perſpirable matter, is diſcharged from them at every reſpiration; and, as this action is increaſed and quickened by exerciſe, the diſcharge of this fluid will be the greater. But, as very cold air is apt to conſtringe or ſhut up the cuticular pores on the ſurface of the body, in like manner, when it is applied to the ſurface of the lungs, eſpecially when they are overheated, it produces the ſame effect there; hence, that perſpirable matter which ſhould be thrown out from them, is retained in the lungs, and produces colds, catarrhs, inflammation, and conſumption.

Thus I have attempted to ſhow the reader the diſadvantages that ariſe to horſes from errors in the management of them, reſpecting their ſtables, food, water, air, and exerciſe; and I hope I have in ſome meaſure pointed out how they may be remedied.

The obſervations that follow, on ſome of the ſurgical and medical branches of farriery, are continued on the ſame plan, and with the ſame view, of pointing out where errors likewiſe prevail in the practice of farriery. At the ſame time, I have endeavoured to ſhow in what manner they may be rectified. They are not offered to the public as complete diſcourſes on the different heads there treated of; but as looſe hints in general, which, if duly attended to by the young practitioner, may be of conſiderable uſe to him in the beginning of his practice. The hints on the treatment of horſes, when they are taken ſick, or otherwiſe diſordered, will, I hope, have their effect in removing thoſe practices that too much prevail in theſe caſes, and which only tend to increaſe, rather than alleviate, the diſorders they labour under.

CHAP.

CHAP. V.

ON THE

MANAGEMENT OF HORSES

WHEN SICK.

THE diſeaſes to which horſes are liable have a great analogy to thoſe of the human body; at the ſame time, they are almoſt as numerous, a few only excepted, which are peculiar to the latter, and which are thought to proceed from the paſſions, or other diſturbances of the mind.

Here a queſtion naturally occurs: How comes it that horſes are ſo liable to ſuch a numerous train of diſeaſes more than other animals of the brute creation? The anſwer is obvious, they are more domeſticated, on account of their ſervices to man, than other animals, the dog only excepted; and even the latter is left more at liberty than the former. The hiſtory of the horſe, in a natural ſtate, affords no inſtances of diſeaſe amongſt the ſpecies; neither is it found that they are liable to diſeaſes when running wild in different parts of Britain. It is likewiſe obſerved, that young horſes are not liable to diſeaſes while they run at liberty, diſtant from towns or villages. They ſeem to enjoy a perfect ſtate of health till ſuch time as they are taken into ſtables, where they are more immediately under the direction of man; it is then that this great change ſeems to take place on their conſtitutions. Hence, therefore, it may be inferred, that this proneneſs to diſeaſes in them, muſt ariſe from the treatment they are ſubjected to in general; from the muſty, cloſe, hot, foul-aired, damp ſtables, &c. they are confined in; from errors in their diet, drink, &c.; from the want of regular airings and exerciſe; from the ſudden tranſitions they are compelled to undergo, from heat to cold, and from cold to heat; and from a variety of other errors in treating them when overheated by violent or active exerciſes; from ſuffering them to drink cold water in that ſituation, or plunging them in cold water; neglect of proper friction or dreſſing, &c. &c.

On conſidering the variety of diſeaſes to which horſes are liable in a domeſticated ſtate, it is ſurpriſing what affinity there are in the ſymptoms attending each of them, with thoſe which take place in the human body in the like ſituation; inſomuch, that, if the ſymptoms attending any one of the diſeaſes to which horſes are liable were faithfully related to a phyſician, although he never ſaw a ſick horſe, yet he could from thence name the diſeaſe under which the horſe laboured at the time. From theſe, and a variety of other arguments which might be offered, it will be obvious, that the cure of the diſeaſes in horſes muſt depend upon the ſame principles as thoſe of the human body, and that the prevention of diſeaſes in the former, muſt likewiſe depend on obviating the cauſes which diſpoſe and render them liable to theſe diſeaſes.

The plan I have adopted will not permit my particularizing the treatment, or medicines, neceſſary to horſes under different diſeaſes; that will be the ſubject of a ſubſequent work. I only propoſe, at preſent, to make a few general obſervations on the common treatment of them when they are taken ſick, or anywiſe diſordered, and ſhow the pernicious conſequences that follow from errors in the management of them in that ſituation. I ſhall, therefore, confine myſelf to a few caſes only.

In

In caſes of Fever.

If a cloſe, hot, foul-aired ſtable, is per-
icious to horſes whilſt they are in health,
is much more ſo to thoſe that are ſick,
ſpecially of a fever, and panting for breath.
he extraordinary care that is then taken
keep the ſtable uncommonly warm, by
hich means all freſh air is excluded; the
ery threſhold under the door, as I have
ſewhere obſerved, even the key-hole, and
ot a crevice that would admit the leaſt
reſh air, but what is ſhut up: In ſuch cir-
umſtances, the air within the ſtable is ſpee-
ily exhauſted, and becomes extremely cor-
upted, inſomuch, that it is not only hurt-
ul to the ſick, but to the other horſes that
re in the ſame ſtable with him. This cauſe
lone is ſufficient to excite the moſt violent
ever, and inflammation in the lungs, even
f the moſt healthy and ſound animal.

Beſides the great heat of the ſurrounding air, in which the horſe ſtands and breathes, his body is kept uncommonly hot by means of a greater load of clothes than uſual, together with a greater quantity of litter under him; and, to add to all this, the vapour and hot ſteams which ariſe from the other horſes bodies, excrements, wind, and urine, that are ſhut up in the ſame ſtable, render the air very unfit for reſpiration, the ſick horſe is ſtifled with heat and the cloſeneſs of the ſtable, he pants for that freſh air which is excluded from him; the great heat in which the horſe's body is kept increaſes his diſorder, and, if ſweating is produced, this, in many caſes, aggravates it ſtill more, by carrying off the thinner parts of the blood, the remaining maſs becomes more viſcid and inflamed, which renders it leſs fit for circulation. In this ſituation, the beſt medicines, however judiciouſly preſcribed, can be of no avail to the ſick, as their effects are counteracted by the above treatment.

I have formerly hinted at the pernicious conſequences of uſing too tight rollers above the horſe's clothes, which confines the lungs, &c. by their compreſſing the parts too much even in health, it is much more hurtful to horſes when ſick, and particularly in the ſituation above mentioned. If a man in a fever were girded round the breaſt with a roller or bandage, it would occaſion the utmoſt anguiſh, and difficulty of breathing, and endanger a ſuffocation; even the weight of the bed-clothes is found oppreſſive in theſe caſes; how much therefore muſt this anguiſh and oppreſſion be in horſes that are ſick, and panting for breath under a fever, when theſe rollers are girded ſo tight, that a horſe, even in health, can hardly breathe with them. I have frequently found, that the ungirding of theſe rollers gave immediate relief to ſick horſes, eſpecially in the above ſituation; and, on admitting freſh air into the ſtable, the violence of the ſymptoms were conſiderably abated.

For the reaſons now mentioned, a ſick horſe ſhould, if poſſible, be removed to a well-aired ſtable by himſelf. But, as horſes are very ſociable creatures, and fond of being in company with others, where they are found to thrive beſt, another horſe may be put in the ſame ſtable with him, but at as great a diſtance as the place will admit of, in order to let the ſick breathe a purer air. His clothing ſhould be very moderate, and by no means girded on too tight about the breaſt, but only in the ſlighteſt manner, to prevent them from falling off. The rack and manger ought to be waſhed clean from dirt, &c. with ſoap and water, before the ſick horſe is put into the ſtall; all the old litter, wet or muſty ſtraw, ſhould be removed; the freſh litter that is put under him ſhould be ſpread thin, as too much of it increaſes the heat about his legs, &c. The rack and manger are afterwards to be kept clean, and free from the ſnot, and other diſcharges that may come from the noſe and mouth, as they are very apt to lick it ıp with their food, or by way of amuſement. When the horſe's breath is very oetid, or of a bad ſmell, the violence of he fever ſtill continuing, the rack and nanger ought to be frequently waſhed or prinkled with vinegar.

Diet for Sick Horſes.

With reſpect to the diet for ſick horſes, t may be obſerved, that, in ſome diſeaſes, ven of the inflammatory kind, the appetite for food is not much diminiſhed; in thers, when very ſick, they refuſe every ind of food. In the former caſe, it ought o be given in a ſmall quantity at a time, nd frequently repeated; it ſhould be of he ſofteſt kind, as maſhes of ſcalded ran, boiled barley, malt, or dry bran, if he horſe refuſes ſoft food. In the latter aſe, when the horſe refuſes food of every ind, it is too common to force it upon him, by pouring wine ſops, &c. down his throat, under the apprehenſion that the horſe will ſuffer from the want of nouriſhment: But this is not the caſe; if the ſtomach loaths food, it is a certain ſign that it is diſordered, and therefore cannot digeſt it. The throwing or forcing more food into the ſtomach, ſerves only to aggravate the diſorder, by increaſing that oppreſſion which already prevails there too much. It is to be obſerved, that the ſtomach of a horſe has not the faculty of vomiting, or even belching up wind by the mouth, which, in theſe caſes, might give him inſtant relief. If a horſe will drink water freely, that is the beſt medicine in ſuch a ſituation, as it dilutes the contents of the ſtomach, which affords an eaſier paſſage for them into the inteſtines. Therefore, no food whatever ſhould be forced on ſick horſes; neither ſhould they be tempted with oats, or other nouriſhing food, as it is by no means proper for them in ſuch a ſituation, although they ſhould ſeem to reliſh ſuch food, which they frequently ſeem to do by way of a change.

In place of oppreſſing the ſtomach of a ſick horſe, by forcing food on him in the manner above mentioned, with the view of nouriſhing him, art furniſhes us with another reſource to ſupport him, if found to be abſolutely neceſſary, and that is by clyſters. How nouriſhment may be conveyed to an animal body by clyſters, I refer the reader to the chapter on that head. I ſhall here only obſerve, that, after the inteſtines are emptied of excrement, by clyſters of warm water, or of very thin water-gruel, in which a handful of common ſalt, or a few ounces of glauber ſalts, have been diſſolved, nouriſhing clyſters, compoſed of two or three quarts of thick water-gruel, may then be given with ſucceſs, and repeated as often as may be found neceſſary. There is no danger of a horſe's ſuffering from the want of nouriſhment by the mouth, in a fever; but there is great danger to be apprehended from its being forced on him, as above mentioned, when the ſtomach cannot digeſt it. After the great inteſtines have been thoroughly emptied of the hardened excrements by clyſters, the contents of the ſtomach find an eaſy paſſage into the ſmaller ones; it is then freed from oppreſſion, and the horſe naturally craves freſh aliment; when he recovers his appetite, there is danger in indulging him with too much at once; this ſhould by all means be guarded againſt, in order to prevent a relapſe.

With reſpect to giving medicines to ſick horſes, the greateſt caution is neceſſary; for, in inflammatory caſes, to which they are very liable, every thing that is heating or irritating is extremely hurtful, and may occaſion the moſt untowardly ſymptoms, and even death may be the conſequence. The common cordial drenches that are too frequently given on moſt occaſions, are the moſt pernicious and hurtful in inflammatory caſes; as they are compoſed of hot ſpices, aromatic powders, with the oil of aniſeed, &c. they aggravate the oppreſſion at the ſtomach, and increaſe the fever.

In order to leſſen the great heat of the body, and to allay the internal commotion which then prevails, ſuch medicines may be given as are termed coolers or ſedatives, from their known qualities of reſtoring regularity to the vaſcular ſyſtem, and, at the ſame time, have the power of removing ſpaſmodic conſtriction in the veſſels, from the calm which ſucceeds their adminiſtration; for which purpoſe, nitre, or ſalt-petre, is amongſt the beſt, and agrees very well with horſes; one ounce of which, diſſolved in a quart of warm water, may be given three, four, or five times a-day, by a horn, when found neceſſary. I would here obſerve, that, in order to render the nitre more effectual, that it be in powder, and mixed with the water immediately before it is adminiſtered, as it loſes conſiderably its cooling efficacy on being long diſſolved; the draught may be ſweetened with honey or molaſſes, in order to render it the more palatable. Another neceſſary caution I would recommend is, that the horſe ſhould be as little fatigued as poſſible in giving it. One man ſhould hold up the horſe's head with both his hands, whilſt another pours the drink, by degrees, into the horſe's mouth, and, when the horſe ſeems tired or fatigued, to allow him time to reſt himſelf at intervals. A variety of other cooling draughts might be mentioned; but, as there is no abſolute neceſſity for ſtudying the taſte of horſes in this reſpect, and, as nitre is found in general to ſit eaſy on their ſtomachs, it will be found to be the beſt medicine that can be given in ſuch caſes: Thoſe who may be willing to change the preſcription, may give the infuſion of lintſeed, mixed with acids, as the juice of lemons or oranges, or a ſpoonful or two of vinegar, where nothing elſe can be got, adminiſtered as above, and a little ſweetened.

In caſes of Gripes, or Cholic Pains.

Horſes are very ſubject to griping or cholic pains; they may proceed from flatulencies, or wind pent up in the ſtomach and bowels, from inflammation of the coats of the ſtomach and inteſtines, or from worms, ſpaſms, &c.

When a horſe is ſeized with griping pains in the bowels, it is common to give ſuch things as are of a heating quality, by the mouth, as pepper, ginger, the different kinds of aromatic powders in gin, or ſome other ardent ſpirit, together with oil of turpentine, oil of juniper, &c. Such preſcriptions are highly improper, for the reaſons formerly mentioned, in caſe the diſorder ſhould proceed from inflammation; as cholic pains, or gripes, from whatever cauſe, have ſome reſemblance to one another, ordinary attendants cannot be ſuppoſed capable of making the neceſſary diſtinction between each ſpecies of them; neither is it neceſſary to particularize them at preſent, as the hints here offered are only calculated to ſhow the bad conſequences that may follow, from the giving of hot irritating compoſitions to ſick horſes, or, in caſes of cholic pains; for, even on the ſuppoſition that the pains proceeded from flatulencies pent up in the ſtomach and bowels, the above mentioned heating compoſitions are improper, as it would appear they rarify the confined air, which, in this caſe, cannot find paſſage either upwards or downwards, it then occupies more ſpace, and, of courſe, by diſtending the parts, increaſes the pain.

In ſuch caſes, the horſe is generally coſtive, and the bowels are loaded with hardened excrements, which being collected in the rectum, or great gut, it preſſes down upon the neck of the bladder, and cauſes a ſtoppage of urine; and, as the horſe naturally tries every means to relieve himſelf, he makes frequent motions to ſtale, but without effect; hence, many people overlook the real cauſe of the diſorder, and attend only to the effect it produces; they therefore preſcribe the ſtrongeſt diuretic medicines, with a view to make the horſe ſtale; from this treatment, and total neglect of the original cauſe of the diſorder, it increaſes, the bowels become inflamed, a gangrene and mortification take place, and death follows.

To corroborate what I have here advanced, I could add a number of caſes, which have occurred in practice, and which have afterwards been confirmed, by inſpecting the bodies of horſes immediately after death; but the following will be ſufficient: A horſe in this neighbourhood, who had laboured under ſevere griping pains for two days, (a diſorder commonly, though very erroneouſly, termed the *botts*, or *batts*, in horſes, although that diſorder is not produced by that ſpecies of worm perhaps once in twenty or thirty caſes, when they are ſaid to be the cauſe) all the heating ſpices, aromatic powders, gin, oil of turpentine, &c. above mentioned, had been poured into his ſtomach, at different times, the diſorder ſtill increaſing. The proprietor deſired I ſhould attend him: But, on ſeeing the horſe, I concluded, from the ſymptoms about him, that he would ſoon die; which happened a few hours afterwards. On opening the body, a conſiderable portion of the bowels ruſhed out with great noiſe; they were inflated with air to a very uncommon degree, as if they had been blown up with a bellows; the ſtomach was in the ſame ſituation; but the lower or back part of the inteſtines, towards the anus or fundament, was filled with dry hardened excrements, as if they had been dried in an oven; a great part of the inteſtines which incloſed this dry hardened dung, were black and mortified. From theſe circumſtances, it would appear, that the hot medicines, &c. which had been poured into the ſtomach, had probably rarified the air in the ſtomach and bowels, and, as it could get no paſſage upwards, for the reaſons formerly mentioned, by the mouth, nor backwards, by the anus, on account of the hardened excrements lodged in the lower inteſtines, that the means which were uſed as a cure, contributed greatly to increaſe the diſorder. But, if emollient or purgative clyſters, or even thoſe of warm water only, had been given the horſe in the firſt ſtage of the diſorder, they would have thinned the hardened excrements, and rendered them fit to be expelled out of the body; the wind, or air, that was pent up in the ſtomach and bowels, would then have found a paſſage backwards by the anus, and the horſe's life might have been ſaved.

In all caſes of violent griping pains in the bowels, bleeding is the firſt thing neceſſary, and that pretty freely, as that relaxes the whole ſyſtem, and paves the way for other means, which are to empty the rectum, by taking out with the hand the hardened excrements that are lodged there; ſometimes they appear ſoftiſh, and the horſe dungs frequently, from pain, in very ſmall quantities at a time; but generally they are very much hardened; in this caſe, the operation formerly mentioned (which is called *back-racking*) gives the horſe great relief, by removing the preſſure from the neck of the bladder; the horſe will then be able to ſtale; but the pain from the air that is pent up in the bowels may ſtill remain; emollient clyſters are then of great benefit, as they not only empty the inteſtines of the excrements, which affords a paſſage for the wind backwards, but they act as an internal fomentation, by which means they contribute to remove the ſpaſmodic conſtriction from the bowels, and prevent inflammation; they may be frequently repeated, till the confined air finds a paſſage backwards by the anus;

when once this takes place, it frequently paſſes off in great exploſions, to the great relief of the horſe. I have obſerved, in ſuch caſes, that the air they paſſed, from being long pent up in the bowels, was more inflammable than ordinary, ſo as to catch fire from a candle, if it happened to be near, and ſpread a blue flame for a conſiderable ſpace around, and ſometimes to ſinge the hair and eye-brows of the byſtanders who were within its reach.

All the different ſpecies of cholic pains whatever cauſe they may proceed from, ought to be treated in the ſame manner, on their firſt attack, as it is a neceſſary ſtep to free the inteſtines from what may tend to aggravate, or add to the diſorder. This becomes the more neceſſary, as it is the only means that can be uſed with ſafety in horſes, to clear the paſſages, and pave the way for medicines, which may be afterwards found neceſſary; at the ſame time, carefully avoiding the giving of medicines, by the mouth, that are either heating or irritating; if opiates are found neceſſary, laudanum may be given, to the extent of a table ſpoonful at once, in a pint* of thin water-gruel, by the mouth; the ſame quantity, if needful, may be repeated about three or four hours afterwards, or it may be given after the inteſtines are cleared of excrement, in a clyſter, increaſing the quantity to two ſpoonfuls, or more: A ſecond bleeding may be neceſſary when the ſymptoms are violent.

When horſes fall ſick, it matters not with ſome what may be their complaint: It is too common to give them ſuch things as many people eſteem cordial or *comfortable* things to themſelves (according to the phraſe); theſe are ardent ſpirits, a little diluted, or wines, ales, &c. either by themſelves, or heated and mixed with different kinds of ſpices. Wines, or ales, may be given in a very ſmall quantity to a horſe that is in health, when tired or fatigued on a journey, or from very hard labour; but they are by no means proper to be given in any quantity to a horſe that is ſick, more eſpecially ardent ſpirits, as neither the ſtomach nor the head of a horſe, even in health, can bear much of them at any time; they ſoon turn giddy, and loſe the uſe of the hind quarters during the fit of intoxication; and, when given to a horſe that is ſick, they may prove, as it were, fewel to the diſeaſe. It would take up too much of the reader's time to enumerate the caſes which have fallen under my own obſervation, where the above treatment has been uſed, and the fatal conſequences that followed from giving theſe *comfortable good things*, as they are called. It may be obſerved, that every thing is good of its kind; but, at the ſame time, it is obvious that theſe good things may be miſapplied, or not proper to be given in caſes of diſeaſe. Thus, roaſt beef, every one in health, and with a keen ſtomach, will allow is a *very*

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* Engliſh meaſure.

good thing, but it is not ſo to a ſick perſon; he will nauſeate and loath the very ſight and ſmell of it; or, allowing that, in ſome caſes, he may have a little reliſh for, and eat ſome of it, yet it is not proper food for him, as the ſtomach cannot digeſt it; a ſick horſe will likewiſe often ſhow an inclination for oats, beans, &c. yet they are not proper food for him, for the ſame reaſon, as they oppreſs the ſtomach, and add to the diſorder.

It is amazing what different kinds of compoſitions are forced down horſes throats on theſe occaſions. I ſhall mention one inſtance: A gentleman in London, who was greatly prejudiced in favour of vinegar, as a cure for many diſeaſes; he was fond of it himſelf, and uſed it frequently with his food. His favourite horſe was taken bad in very warm weather; and, as he thought vinegar was a very good cooling *thing*, he ordered one Engliſh pint of it to be given his horſe at once; it was no ſooner ſwallowed,

lowed, than the horſe lay down, ſtretched himſelf, and died.

The treatment, in this laſt caſe, differs entirely from any of the former above mentioned, in a very oppoſite extreme; but, as the nature of the horſe's complaint, in this laſt caſe, was not known, as the owner would not ſuffer him to be opened, and as I never knew or heard of any other inſtance where ſuch a quantity of vinegar was given at once to a horſe, I cannot take upon me to ſay what effects it may produce; but, if I may be allowed to conjecture, I would preſume, from ſimilar caſes, that the coats of the ſtomach had been inflamed, a diſorder which frequently takes place in horſes, eſpecially when there are worms in it; and, in ſuch caſes, any thing that is too cooling, acid, or ſharp, in its nature, when poured into the ſtomach, may produce the ſame effects, and haſten the horſe's death. I ſhall mention one inſtance. I was once deſired by a farrier in this neighbourhood, who was indiſpoſed, to viſit a horſe that had been a patient of his for ſome days, and report the ſituation he was in. His ſervant was giving the horſe a drink when I entered the ſtable, which, I was afterwards informed, was compoſed of an infuſion of lintſeed, in which was diſſolved one ounce of ſal nitre, with honey to ſweeten it, and, in the laſt hornful was poured, from a ſmall vial, about half an ounce, or more, of ſpirits of hartſhorn. The horſe ſeemed very uneaſy after the drink; he was ſoon ſeized with a violent trembling and ſhaking; a profuſe ſweat broke out all over his body, and run down his ſides, as if water had been poured on him; at the ſame time, his legs and ears were quite cold; he lay down, ſeemingly in great agony; he was ſoon after convulſed all over, and died in about half an hour from the time the drink was ſwallowed. I obtained leave to take out his ſtomach where he was, on condition I ſhould ſew up the ſkin afterwards, in order to prevent any bad ſmell in the ſtable, till he could be carried off. On inſpecting the ſtomach, the coats of it were greatly inflamed, a mortification had taken place on one ſide, where it appeared of a darker colour, in which there was a ſmall hole, through which a lead probe paſſed into the cavity of the ſtomach from the outſide; the coats of the ſtomach were conſiderably thickened, and of a darkiſh red colour, reſembling that of the liver; at the ſame time, it was conſiderably diſtended, and full of food: On turning it inſide out, an incredible number of ſmall worms, called *botts*, were found ſticking all round the ſides and lower part of the ſtomach, inſomuch that it appeared entirely covered with them, and ſticking as cloſe to one another as bees in a honeycomb *; and ſo firmly were the heads of theſe vermin fixed in the coats of the ſtomach, that, in endeavouring to pull ſome of them off when alive, they broke in two, and their heads remained ſticking in the coats of the ſtomach.

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* A ſection of this ſtomach, with the worms ſtill adhering in the ſame ſituation, I have by me, preſerved in ſpirits, in which is the perforation or hole where the mortification had taken place.

The great irritation cauſed by ſuch a number of theſe worms ſticking in the coats of the ſtomach, had no doubt occaſioned at firſt the inflammation there, and, from its continuance, was tending to a mortification, before the drench was given, which would ſoon have occaſioned the horſe's death; but there is every reaſon to think that the drench haſtened it *.

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* One remark, which is worth notice, in the above caſe: The horſe was very fat, and had been only three weeks out of the dealer's hands, where he had been fed with a great deal of what is called *foul feeding*, which is grain of different kinds boiled together with the chaff, and which, it is thought, produces worms of different kinds in the ſtomach of horſes: Another circumſtance is, that the horſe died in the winter ſeaſon, when bott worms are very uncommon, although they are frequently found in horſes in the beginning of ſummer, and may be obſerved ſticking in the anus; they likewiſe

When horſes are ſick, warm water is generally preſcribed them for drink; this, from a variety of circumſtances, is either totally neglected, or over-done, to ſave trouble, eſpecially when it happens that the ſtable is ſituated at a diſtance from where it is heated; on that account, a pailful of over-heated water is preſented to the ſick horſe, which he loaths. It is likewiſe too common to mix ſal nitre in the water, the diſagreeable taſte of which prevents many horſes from drinking it; beſides, many horſes are particularly ſhy in drinking warm water at any time; hence, in ſuch caſes, they ſuffer conſiderably from the want of water to dilute their fluids in general, and to promote the neceſſary ſecretions of urine, &c. likewiſe to dilute the food that may be in the ſtomach. This deſerves particular at-

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wiſe may be obſerved in conſiderable quantities amongſt the horſe's dung at this time. The bott worm ſeems to be a fly in a chryſalis ſtate; for I have frequently found the outer caſe, or ſhell, open at one end, when the fly had left it.

tention, and ought to be guarded againſt; every means ſhould be tried to tempt horſes, if poſſible, to drink freely in ſuch caſes; and ſometimes it may be forced on them, by pouring it down their throats with a horn, for the following reaſons. I have already obſerved, that the diſeaſes to which horſes are moſtly liable are of the inflammatory kind; and, as the thinner parts of their fluids are carried off by the frequent and ſtrong perſpiration they are expoſed to, from the nature of their exerciſes or labour, when they are ſeized with acute diſeaſes, their blood, and other fluids, are then more diſpoſed to be thick, viſcid, and inflammatory; therefore, as water is the principal diluter of the fluids in general, in ſuch caſes, a conſiderable quantity of it drunk at this time becomes highly neceſſary; and, perhaps, in ſome caſes, it might prove the beſt medicine that could be given them. When they are inclined to drink, but refuſe water that is warmed, I never found any bad conſequences follow from indulging ſick horſes with cold water, after a little oat-meal was mixed with it, and giving it in a very ſmall quantity at one time. I was once called to a horſe that had got what is called a *piſſing drink*, for a thickneſs in his legs. The drink or drench, I was informed, conſiſted of eight ounces of yellow roſin in powder, a table ſpoonful of oil of turpentine, and about half that quantity of oil of juniper, in a quart of forge water. The horſe was very ſick; he refuſed both food and water; his pulſe was hard and quick, his mouth dry and parched, his legs and ears cold, his belly greatly diſtended, &c. He was immediately blooded; after which he was *back-racked*, that is, the dung or excrement was taken out of the rectum by the hand; in performing of this operation, the operator was ſenſible of uncommon heat in the body; an emollient clyſter was then given; half a pailful of water, the chill taken off, was poured into his ſtomach, after which he ſeemed conſiderably relieved; he then ſtaled a little, which was of a reddiſh colour and very thick; water was then offered him, of which he drank with more freedom; he afterwards began to ſtale very profuſely, and which continued, with ſhort intervals, for the ſpace of twenty-four hours, which reduced his fleſh and ſtrength conſiderably, and it was ſome time afterwards before he recovered either. I have ſometimes met with caſes attended with the above ſymptoms, when horſes had got improper phyſic, or bad drugs thrown into the ſtomach, which I have treated in the ſame manner, and with ſucceſs.

In the above caſe, it is probable, from circumſtances, that the drench remained in the ſtomach undigeſted, by which it was oppreſſed, and its action, in ſome meaſure, ſuſpended, by the injudicious preſcription of ſo much roſin, as it was near double the quantity that ſhould have been given, even to the coarſeſt or moſt robuſt horſe; and, as the drench could not be thrown up again by the mouth, for the reaſon formerly mentioned, the pouring water into the ſtomach contributed to dilute and waſh it out at the lower orifice into the inteſtines, where it was abſorbed, and, in the courſe of circulation, carried by the renal veſſels to the bladder; the bleeding contributed to remove the ſpaſmodic conſtriction which had taken place, and the clyſter was of uſe in emptying the inteſtines, and particularly the rectum, of hardened dung, which, for the moſt part, generally takes place in violent ſickneſs, attended with great internal heat of the body, and, by removing the preſſure from the neck of the bladder, left it at freedom to expel its contents, which, from the colour and viſcidity, appeared to have been ſuppreſſed for ſome time.

The ſame method of procedure, as I have juſt now obſerved, when horſes have got improper phyſic that does not operate, or bad drugs that may oppreſs the ſtomach, and create ſickneſs, will be found to give relief, only the clyſters may be repeated twice or thrice, in order to empty the inteſtinal canal, and forward the diſcharge of what has been hurtful, by the anus.

In Caſes of a Swelled Throat.

Horſes, in every period of life, are ſubject to violent inflammations of the glands about the throat, &c. on catching cold; but young horſes, in particular, are more liable to this diſorder, which is always more or leſs attended with a fever; at the ſame time, they refuſe food and drink, as they cannot ſwallow either on account of the violent pain it occaſions. This circumſtance is too frequently overlooked; and, as it is too generally apprehended that the horſe will ſuffer from the want of nouriſhment, or from the want of medicine, which may be thought neceſſary, in this caſe, their heads are forcibly held up, and they are compelled to ſwallow whatever is poured into the throat, though with the utmoſt pain; and as the lungs, in ſuch caſes, are more or leſs affected by the inflammation extending downwards on them, whatever is poured into the mouth irritates the upper part of the larynx or wind-pipe, and occaſions the moſt violent coughing, and difficulty of breathing, attended with trembling, cold ſweats, and other alarming ſymptoms. In ſuch caſes, whatever is forced upon them by the mouth, whether food or medicine, does them more real injury than is generally imagined; the fever, by this means, is increaſed, the circulation is carried on with uncommon rapidity, attended with great internal commotion, the whole ſyſtem is deranged and put out of order, and, if theſe ſymptoms are not ſpeedily allayed, the diſorder acquires ſtrength, the powers of life are overcome and exhauſted, and death ſoon follows.

Therefore, in ſickneſs or diſtreſs of any kind, every thing that tends to add to the diſorder, whether by oppreſſing the ſtomach with food or medicine, or cauſing any great commotion or diſturbance in the ſyſtem, ought to be carefully avoided; a ſick horſe ſhould, in every reſpect, be as little diſcompoſed as poſſible. There is not the leaſt neceſſity for expoſing them to ſo much diſtreſs and hazard, as it is very evident, from the foregoing obſervations, that nouriſhment may, with the greateſt eaſe, when neceſſary, be conveyed into the body of a horſe by the anus, in the form of a clyſter. This method I have always practiſed with ſucceſs, and ſupported horſes for ſeveral days together, when they could not take any nouriſhment whatever by the mouth.

CHAP.

CHAP. VI.

OBSERVATIONS

ON

BLOOD-LETTING.

ALTHOUGH the method of performing the operation of blood-letting is enerally thought to be pretty well known, et there are many untoward accidents that requently happen from the unſkilful and nexperienced, in performing this operaion.

As horſes are naturally timorous and earful, which is too frequently increaſed bad uſage, and improper chaſtiſement, ey require, in ſome caſes, particularly in this of bleeding, to be taken unawares, or by ſurpriſe, and the orifice made into the vein before their fears are alarmed; for this reaſon, the fleam and *blood-ſtick* (as it is called) have been long in uſe, and, in ſkilful hands, are not improper inſtruments for the purpoſe; although, with many practitioners, the ſpring-fleam would be much ſafer, and, on that account, ought to be preferred. When a lancet is uſed, the inſtant the horſe feels the point of it, he raiſes or ſhakes his head and neck, in order to ſhun the inſtrument, before the operator has time to make a proper orifice, which frequently proves too ſmall or too large; for this reaſon, thoſe who have tried the lancet have been obliged to lay i aſide.

Many people tie a ligature or bandage round the neck, in order to raiſe the vein, and that they may ſtrike the fleam into i with the greater certainty; but a ſlight view of its effects in preventing this, and its other conſequences, will ſhow the impropriety of this practice.

When a ligature is tied round the neck, previous to bleeding in the jugular veins, it is to be obſerved, that it ſtops the circulation in both veins at the ſame time; hence they become turgid and very full of blood, inſomuch, that they feel under the finger like a tight cord; and, as the parts around them are looſe and ſoft, when the ſtroke is given to the fleam, the vein, by its hardneſs or tightneſs, ſlips to one ſide; of courſe it eludes the ſtroke; hence a deep wound is made by the fleam to no purpoſe, and this is ſometimes too frequently repeated. Unſkilful people have likewiſe a cuſtom of waving or ſhaking the blood-ſtick, before they ſtrike the fleam, in view of the horſe, whoſe eye is fixed on that inſtrument, and, when they intend to give the ſtroke, they make a greater exertion; hence the horſe, being alarmed by its motion, raiſes his head and neck, a diſappointment follows. The ſtruggle that enſues, by this means, prolongs the operation; the ligature, at the ſame time, being ſtill continued round the neck, a total ſtagnation of the blood in the veſſels of the head takes place; and hence it frequently happens, that the horſe falls down in an apoplectic fit. In ſuch caſes, I have obſerved the operator greatly diſconcerted, and deſiſt from any farther attempts to draw blood at that time, being prepoſſeſſed with the idea that the horſe was vicious and unruly, although the very treatment the horſe had juſt undergone rendered bleeding at this time the more neceſſary, in order to make a ſpeedy revulſion from the veſſels of the head. Therefore, a ligature or bandage ought never to be uſed till ſuch time as the opening is made into the vein, and even then it will not be neceſſary at all times, if the horſe can ſtand on his feet, as a moderate preſſure with the finger on the vein will make the blood flow freely; but, if the horſe is lying on the ground, a ligature will be neceſſary.

But farther, the concuſſion or ſhock the horſe receives from his falling down in the above ſituation, which will always happen if the ligature is too long continued, may cauſe a blood-veſſel within the head to burſt, and death may be the conſequence.

Another cuſtom equally abſurd, is allowing the blood to fall in a dung-hill amongſt ſtraw, in dry ſand, or in dry duſt, by which means, no diſtinct idea can be formed of the quantity that is, or ought to be, taken away. In ſuch caſes, I have ſeen horſes fall down in a faint from the loſs of too much blood, before the operator thought of ſtopping up the orifice *. For this, and a variety of other reaſons which might be mentioned, a meaſure ought always to be uſed,

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* I was witneſs to a caſe of this kind in London;—a maſter farrier was the operator.

uſed, in order to aſcertain the quantity of blood that is taken away.

In pinning up the orifice, ſome people have a cuſtom of raiſing or drawing out the ſkin too far from the vein, hence the blood flows from the orifice in the vein into the cellular ſubſtance between it and the ſkin, which cauſes a large lump or ſwelling to take place immediately; this frequently ends in what is called a *ſwelled neck;* a ſuppuration follows, which proves both tedious and troubleſome to cure. In caſes when a horſe may be tied up to the rack, after bleeding in the neck, pinning up the external orifice may be diſpenſed with; but, when a horſe is troubled with the gripes, or any other acute diſeaſe, in which he lies down and tumbles about, it is neceſſary that the orifice be pinned up with care, in order to prevent the loſs of too much blood.

As the neck or jugular vein, on the near ſide, is commonly opened for conveniency by thoſe who are right-handed, the young practitioner ſhould learn to perform this operation on both ſides of the neck. This he will find, in practice, to be not only uſeful, but neceſſary, as he may frequently have occaſion to draw blood from horſes in very aukward ſituations; he will likewiſe find his account in it in a variety of caſes, which it is needleſs here to particularize.

The proper place for making the opening in the neck, or jugular vein, is likewiſe neceſſary to be attended to; for, when the orifice is made too low, or about the middle of the neck, where the vein lies deep under the muſcular teguments, the wound becomes difficult to heal, and frequently ends in a ſuppuration, with a jetting out of proud fleſh from the orifice, which, unluckily, is as unſkilfully treated in the common method of cure, &c. which is, by introducing a large piece of corroſive ſublimate into the wound; this not only deſtroys the proud fleſh in the lips of the wound, but a conſiderable portion of the fleſh around it; and, in farriery, it is called *coreing out the vein.* It frequently happens, that this corroſive application deſtroys the vein likewiſe: I have ſometimes ſeen violent haemorrhages follow from this cauſe, inſomuch as to endanger the life of the animal.

The moſt proper place for making the opening in jugular veins, is, where the teguments are thinneſt, which is about a hand-breadth from the head, and about one inch below the branching or joining of the vein, which comes from the lower jaw, and which may be diſtinctly ſeen, when any preſſure is made on the main branch of the vein.

In performing the operation with a fleam, the operator ſhould hold the fleam between the fore-finger and thumb of the left hand, with the ſecond finger he is to make a ſlight preſſure on the vein, and, before it becomes too turgid or full, make the opening; the ſame degree of preſſure is to be continued on the vein, till ſuch time as the quantity of blood to be taken away is received into a proper meaſure.

Another great error, which generally prevails in opening the veins with a fleam, is the applying too great force, or giving too violent a ſtroke to it, by which it is forced through the oppoſite ſide of the vein; hence, there is danger of wounding the coats of the arteries, as they generally lie under the veins, or, in ſome particular places, of wounding the tendons, eſpecially when this operation is performed in the legs, thighs, &c. or in the veins, commonly called the *plate veins*, under the breaſt, the conſequences are frequently very troubleſome to remove, and, in ſome caſes, prove fatal; hence, the remedy ſometimes proves worſe than the diſeaſe or lameneſs it was

intended

intended to remove. Mr Gibſon *, in his Treatiſe on the Diſeaſes of Horſes, mentions a caſe of a fine horſe, that was blooded in the plate veins for a lameneſs of the ſhoulder, which was followed with a hard oval ſwelling about the ſize of a gooſe egg; this ſwelling extended upwards on the breaſt, and likewiſe down the leg, attended with exceſſive pain, fever, deadneſs in the horſe's looks, and all the other ſymptoms of a beginning mortification, which with great difficulty was prevented. I could likewiſe add a number of ſimilar caſes, which have fallen under my own inſpection, but ſhall not trouble the reader with them at preſent.

In order to avoid the conſequences ſometimes attending theſe local operations in the breaſt, legs, &c. and, as horſes are more o leſs troubleſome and reſtleſs, whereby accidents of this kind may happen, it will perhaps be adviſeable, in moſt caſes of lameneſs, &c. to let blood from the large vein

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* Vol. ii. page 187.

veins in the neck only, where there is leſs danger of accidents, more eſpecially if a ſpring fleam is uſed; for, although it might be of ſome advantage, in particular caſes, to draw blood as near the affected part as poſſible, yet the bad conſequences frequently attending it, ought to counterbalance any advantages that may be expected from it, eſpecially as the quantity of blood taken from the ſmall veins is but inconſiderable, and, of courſe, no great benefit can be expected from it in horſes when they are diſeaſed.

The principal view in letting blood is the leſſening of its quantity, by which the remaining maſs circulates with more freedom in the veſſels; it likewiſe takes off the inflammatory tendency of the blood; it removes ſpaſms, &c. and prevents other bad conſequences that may follow, eſpecially in plethoric habits; and it ought always to be remembered, that, when the ſigns or ſymptoms of a diſeaſe are taken from the motion of the blood, the diſorders ariſing from it depend upon its circulation being either increaſed or diminiſhed; hence, therefore, all the changes which take place in the texture, quantity, and quality of the blood, are attended with a diminution or increaſe of its velocity.

Although the caſes which may require bleeding are numerous, yet I would recommend one general caution, which is, never to take away blood but when it is abſolutely neceſſary; for it is a fluid that may be eaſily taken away, but cannot be ſo eaſily replaced; beſides, the practice of bleeding frequently, or at ſtated times, is exceedingly improper, as it diſpoſes the body to become lax, weak, and plethoric.

In bleeding, therefore, a due regard muſt always be had to the conſtitution, age, ſtrength, &c. of horſes, and the ſtate or habit of body they are in at the time.

It is commonly ſaid, that the taking away a little blood from horſes, even when they are in health, or when they are in the leaſt indiſpoſed, *will do no harm:* This, in one ſenſe, may be allowed to be literally true; but why let blood from them on every trifling occaſion, unleſs there may be ſuch ſymptoms attending as may require it? I have obſerved in many horſes who have been very frequently blooded, and which may be eaſily known, from the cicatrices or marks on the neck-veins, that their blood was poor and thin, and had loſt that tenacity peculiar to rich blood, together with a conſiderable portion of its florid and red colour. Butchers who ſlaughter calves may find their account in bleeding them frequently, as it renders their fleſh white, by taking away the red particles of the blood; but in horſes it is quite otherwiſe, as they are deſtined for hard labour and active exerciſes; it impairs their conſtitutions, ſubjects them to diſeaſes, and haſtens a premature old age.

As the blood of horſes, more eſpecially thoſe who are conſtantly employed in hard labour, or in active exerciſes, when drawn from a vein, appears of a darkiſh or deep red colour, even in the higheſt ſtate of health, it is commonly ſaid to be bad blood, and more ſo, when a thick yellow or buff-coloured cruſt forms on the ſurface after it is cold; hence theſe appearances are ſaid to require a repetition of bleeding; for it very unluckily happens, that moſt of the diſeaſes to which horſes are ſubject are thought to proceed from ſome impurities or *humours*, as they are called, in the blood, which require to be drained off by bleeding, and other evacuations.

With regard to any information that may be drawn from the appearance of the blood when cold, it will be found, that no certain concluſion can be formed from it, ſince blood that is taken from a horſe who is evidently diſordered, will ſometimes have the ſame appearance, when cold, as that drawn from a horſe in health. On the other hand, blood drawn from a horſe in health, will ſometimes have all the appearance of that drawn from one labouring under the moſt dangerous diſeaſe; and this may depend on ſo many concurring cauſes, that renders it difficult to fix any preciſe ſtandard how we may judge, either of the healthy or morbid ſtate of the blood in horſes when cold; as its appearances are even affected by the manner in which the operation of blood-letting is performed, and that of the blood's being received into the veſſel.

When blood is taken from a vein of a horſe that is in health, it appears to be an uniform fluid of a red or darkiſh colour; but, after it has been expoſed to the cold air, &c. it coagulates into a ſtiff maſs, which gradually ſeparates the thinner parts into a pellucid ſerum, the thicker parts into a red or darkiſh maſs, which is called the *craſſamentum.*

Although I am thus ſparing of taking blood from horſes on trifling occaſions, when they may be ſaid to be in health, yet, when caſes occur that do require it, I would recommend the taking away a greater quantity at once than is generally done, that is, from ſix to eight pounds, which will be about three or four quarts Engliſh meaſure, according to the urgency of the ſymptoms, &c. at the time, ſtrength and age of the horſe conſidered. For, as horſes are very ſubject to inflammatory diſeaſes, and thoſe that are of the ſpaſmodic kind, and as bleeding plentifully relaxes the whole ſyſtem, in theſe caſes, the taking away a ſmall quantity of blood, about one quart, or two pounds, is in fact trifling with the diſeaſe: The horſe is ſaid to have been blooded; that ſatisfies his owner and the farrier; time is loſt; the diſeaſe acquires ſtrength; it will then be beyond the power of art to mitigate or to conquer it; hence the horſe falls a ſacriſice to timidity and ignorance. It is to be remembered, that, inflammatory diſeaſes, (particularly when the bowels are affected), make a very rapid progreſs in horſes, and, ſoon come to a ſpeedy termination, if they are not overcome at the beginning, by bleeding plentifully, the horſe commonly dies, in twenty-four or thirty hours, of a gangrene and mortification in the inteſtines. I have ſeen ſo many caſes of this kind, and which have been confirmed on diſſecting the bodies afterwards, that I cannot be too full on the ſubject, in warning practitioners how they ſhould act in ſuch caſes; and, perhaps, few occurrences in practice ever gave me more uneaſineſs, than to be conſulted in the laſt ſtage of theſe complaints, when it was evident that the proper means of checking the diſſorder in the beginning, had been neglected, and was then too late to be remedied.

The quantity of blood here recommended to be taken away at once, may, by many, be objected to: In anſwer to which, I would obſerve, that, in inflammatory caſes, I have always found the greateſt benefit from it in practice. And that, in ſome degree, it ſuperſeded the neceſſity of other preſcriptions by checking the growing diſſorder at once. The robuſt conſtitution of a horſe, in ſuch caſes, can bear an evacuation of this kind, without that debility and faintneſs attending human patients. To corroborate what I have now advanced, I ſhall quote a paſſage from Doctor Bracken, who has been at ſome pains in calculating the quantity of blood that may be in a horſe of a middling ſize. The Doctor in his firſt volume, page 50. ſays, "That it is ſuppoſed there paſſes "through the heart of a horſe 1800 times "four ounces, or 450 pounds of blood in "an hour. Now, the common received "opinion is, that the whole maſs of blood "in man is about twenty-five pounds, "and in an horſe ſix times as much; and "therefore, according to this allowance, a "quantity of blood equal to the whole maſs "paſſes through the heart in an hour in a "man, and in an hour and twelve minutes "in a horſe; and, from thence, it may be "obſerved how neceſſary it is to take away "greater quantities of blood in many caſes "than is commonly practiſed; for what "ſenſible effect can the taking away a "quart of blood from a horſe have upon "him, if we conſider that he has near "225 times as much in his body."

The blood is a fluid of a peculiar nature; it is the great fountain of life, and the ſource of all the humours in the body; it circulates through, and nouriſhes every part of the animal ſyſtem, being conveyed from the heart by the arteries to the extremities and ſurface of the body, and returned to the heart again by the veins. This circulation is ſo complete, that the moſt trifling wound or ſcratch is immediately followed with a diſcharge of blood from the ſmall capillary veſſels of the ſkin. In order to explain more fully how the circulation is performed, it will be neceſſary to give a ſhort deſcription of the heart, the arteries, and veins, with ſome general remarks on the pulſe of horſes.

The heart is a muſcle of a conic figure, that is, broad at its baſis, and terminating in a blunt apex or point; it has four cavities, two of which are called auricles or ears, and the other two ventricles. The auricles are ſituated at the baſis of the heart, and receive the blood immediately from the veins; the right from the vein called vena cava, and the left from the pulmonary vein; at the bottom of theſe auricles, are certain valves which open into the ventricles, and ſhut again when the latter are filled with blood, in order to prevent its return to the auricles: Thus, when the right ventricle receives the blood through its auricle, the valve ſhuts, and the blood is forced, by the contraction of the heart, from the ventricle into the pulmonary artery, which riſes immediately out of that ventricle, and is carried into the lungs; it is returned from thence by the pulmonary vein into the left auricle, which empties itſelf into the ventricle on the ſame ſide, and by it the blood is forced into the great artery or aorta, which riſes out of that ventricle, and which conveys it all over the body; the blood is returned to the heart by the veins (which, in their courſe, take in the chyle or nouriſhment) to the right auricle of the heart, which completes the circulation.

The heart is fixed at its baſis, by the veſſels, &c. which belong to it, and to the mediaſtinum, &c.; it is contained in a bag or purſe, called the pericardium, within which there is a ſmall quantity of a clear watery lymph, ſeparated there by the exhaling veſſels, that the ſurface of the heart may not grow dry from its continued motion;

tion; the heart is ſupplied with nerves and blood-veſſels for its own nouriſhment.

The arteries are conical tubes or pipes, which convey the blood from the heart to all the parts of the body; they poſſeſs a very elaſtic quality, by which they contract and dilate themſelves, according to the impulſe of the blood, which is propelled or forced into them by the heart: This contraction and dilatation of the arteries is called the pulſe, and which takes place in all the arteries at the ſame inſtant of time; for, as the left ventricle throws out the blood into the arteries, they are dilated, and, as ſoon as the elaſticity of the arteries can overcome the impulſe of the blood, they are again contracted; hence theſe two cauſes, viz. the action of the heart, and the elaſticity of the arteries, operating alternately, keep the blood in a continual circulation.

The arteries being conical canals, are large at their origin, and gradually diminiſh towards their extremities (reſembling the trunk and branches of a tree) where they anaſtomoſe, or join with the extreme branches of the veins; hence, the latter may be ſaid to be a continuation of the arteries.

The veins, as I have juſt now mentioned, are a continuation of the extreme capillary arteries reflected back towards the heart, uniting their channels or branches as they approach it, till at laſt they form the larger veins; hence, they may be ſaid to reſemble the branches and trunk of a tree, inverted from the extremities to the heart. There is no pulſation in the veins, becauſe the blood is thrown into them in a continued ſtream from a narrow channel to a wider.

In moſt of the veins where the blood riſes in a perpendicular column, as in the legs, &c. there are valves which open towards the heart, and admit the blood to paſs freely; but it cannot fall back or repaſs theſe valves; therefore, if it is not puſhed on with ſufficient force, it may diſtend the veins, and cauſe a ſwelling of the legs. Hence it is obſerved, that this lentor or ſluggiſh circulation of the blood in the leg-veins, is removed, and the circulation greatly forwarded, by muſcular motion, or, in other words, by exerciſe.

The veins, for the moſt part, accompany the arteries; hence, when a vein muſt be opened, it is to be remembered, that an artery is near, and, frequently, immediately under it, as large as the vein itſelf, (and which may be eaſily diſtinguiſhed by its pulſation); and hence the coats of the arteries are liable to be wounded by an unſkilful operator in letting blood. The extreme branches of the arteries and veins have numerous communications with one another, reſembling the fibres in the leaves of plants, by which communications, the blood, when obſtructed from any cauſe in the branchings of theſe veſſels, may paſs through by other channels that are not obſtructed; this likewiſe takes place when the larger veſſels are divided; the circulation is continued by the detached branches of the remaining veins.

Theſe remarks being premiſed, it remains to make ſome obſervations on the pulſe of horſes, a due attention to which is of the utmoſt conſequence to practitioners in farriery, and which, in the general practice, ſeems either to be not underſtood, or not attended to; for, without a proper knowledge of the pulſe, we neither can form a right judgment of diſeaſes, in which the vaſcular ſyſtem is affected, the velocity of the blood increaſed or diminiſhed, neither can we judge rightly when it is neceſſary to let blood, nor to refrain from it. It will therefore be proper, firſt to conſider the pulſe in a healthy ſtate, before we can form a juſt idea of it when a diſeaſe takes place.

The pulſe of a horſe that is in health, and nowiſe terrified or alarmed, is from 36 to 40 beats in a minute; it may eaſily be felt by preſſing the fingers gently on the temporal artery, which is ſituated about an inch and a half backwards from the upper corner of the eye. It is neceſſary to obſerve, that, if the fingers are preſſed too hard, (as the bone or ſcull lies below the artery), no pulſation will be felt, as too great preſſure ſtops the circulation in the artery at the time. It is likewiſe neceſſary to obſerve, that the pulſe of a horſe, about thirteen or fourteen hands high, is quicker than one of a larger ſize. When a horſe is in great pain, or in a violent fever, the pulſe will be raiſed from 80 to 100 beats in a minute, and ſometimes conſiderably above it.

The pulſe, in a healthy ſtate, is equal, moderate, and free; which ſhows, that the heart and vaſcular ſyſtem in general are firm and vigorous, and that the heart empties itſelf freely at each contraction and dilatation, that there is no impediment to the paſſage of the fluids through the viſcera and veſſels, and that the nervous power acts uniformly upon every part of the circulating ſyſtem. Whereas, in a morbid or diſeaſed ſtate, it will be unequal and intermitting every now and then, varying in the time between the ſtrokes, as well as the force of the ſtroke; ſometimes it will ſtop entirely, and ſometimes it will be immoderately quick, at others unnaturally ſlow; ſometimes it will be raiſed greatly above the healthy degree of ſtrength, and at others ſunk as much below it. This unequal or intermitting pulſe, ſhows, that the nervous ſyſtem is greatly diſordered, and portends great danger, eſpecially if it becomes ſo after long illneſs, when the ſtrength is much exhauſted.

When the pulſe beats ſtrong and quick, it ſhows, that the morbid or diſeaſed ſtimulus, excites the heart to expel the blood, with great force, and that the progreſſive motion of the blood is more rapid and impetuous than it ought to be; as this ſtrong pulſe ſtrains and ſpeedily exhauſts the vital powers, it portends great danger, if not ſoon removed.

The hard, quick, and ſtrong pulſe, is generally a ſymptom of conſiderable irritation, and ſhows, that the heart is greatly ſtimulated; this takes place in inflammations of the viſcera, as in peripneumony, or inflammation of the lungs, ſtomach, inteſtines.

The hard, quick, low, or ſmall pulſe, ſhows great inward pain, which, by ſympathetically affecting the heart, excites it to empty its ventricles before they are ſufficiently filled with blood.

A quick pulſe is generally a ſign of a fever; when it is exceedingly quick and weak, it is always a very dangerous ſymptom, as it ſhows, that the powers of the heart are nearly exhauſted, and that, in order to ſupport the circulation, it is forced to act more frequently, and to empty its ventricles by a number of weak contractions.

When the pulſe beats ſoft and weak, it may be owing to a general laxity of the fibres of the arteries, or to a thin watery ſtate of the blood, which enables it to glide too eaſily through the veſſels, that the heart is not under the neceſſity of exerting ſo much force in propelling it through the arteries, as when they are more firm or unyielding, or when the blood is more denſe or viſcid, which are great impediments to a free circulation in particular organs.

A weak pulſe is a ſign either of a conſiderable debility or weakneſs of the heart; or too ſmall a quantity of blood in the veſſels in general, or ſome impediment to the influx of the blood into the heart, or to ſome, or all of theſe cauſes combined; for this reaſon, it is to be met with frequently in low fevers, or towards the end of diſeaſes that prove fatal.

When the pulſe remains full under the fingers during the contraction and dilatation of the arteries, it is a ſign of too great fullneſs of the veſſels, either from a plethora; or too great a rarification of the fluids, by febrile, heat, or other cauſes; it indicates danger from accumulation, diſtenſion, and even rupture of ſome of the blood veſſels in particular organs. But, if the pulſe, though full, is at the ſame time ſoft and diſtinct, it is a favourable ſymptom, as it ſhows, that there is no conſiderable conſtriction in the veſſels.

Upon the whole, the pulſe is always bad when it is very different from its natural ſtate; for, as a weak and quick pulſe ſhows debility in the heart and vaſcular ſyſtem, regard at the ſame time being always had to other ſymptoms, if the pulſe ſink in fevers there is great danger.

On the other hand, when the pulſe is equal, regular, and moderately full, eſpecially if it becomes ſo from being languid, weak, and irregular, on the breaking out of ſome critical diſcharge, as that of ſweat or looſeneſs, or the ſtaleing frequently, it is a ſign of amendment.

From what has been obſerved, it will be obvious, that the information to be attained from a due attention to the ſtate of the pulſe in the diſeaſes of horſes, is of conſequence in the practice of farriery. Young practitioners ought therefore to make themſelves well acquainted with all the variations that take place in diſeaſes, together with the changes that happen when deviating from the healthy ſtate to the morbid or diſeaſed.

It may be neceſſary again to obſerve, that, in feeling the pulſe of a horſe in health, that he be not frightened, nor anywiſe alarmed, as that will make an alteration in the quickneſs of the pulſe, which will be apt to miſlead the unexperienced.

Thus much may ſuffice at preſent concerning the pulſe in general; it will be neceſſary to be more particular when the ſigns to be taken from it are applied to particular diſeaſes, and corroborated by other ſymptoms, which will be mentioned in a future work. I ſhall therefore proceed to enumerate the different caſes that may require bleeding.

The caſes which may require bleeding, are in all violent bruiſes or ſtrains in the muſcular or tendenous parts; in large wounds, eſpecially when there is a laceration or tearing of the parts without much loſs of blood from the wound; in the beginning of all cuticular diſorders or eruptions on the ſkin, as little puſtules, dry ſcabs, &c.; in large ſwellings on the body or legs; in all deep punctures, or ſmall wounds, when the horſe ſhows ſymptoms of great pain, &c.; in ſwellings of the legs and heels, from inflammations, &c.

Bleeding is neceſſary in moſt diſeaſes where great ſickneſs prevails, and is the ſpeedieſt method of giving relief in the beginning of inflammatory fevers, to which horſes are very liable; it is alſo neceſſary in all violent acute pains, as in the gripes or cholic, ſtrangury or ſuppreſſion of urine; in rheumatic complaints, where the pain cauſes ſtiffneſs or lameneſs, and which frequently ſhifts from one limb to another, or when it affects the neck, and occaſions that ſtiffneſs and contraction of the muſcles, which is commonly called the *chords*; in inflammation of the eyes, or palate of the mouth, the latter of which is called the *lampars*, when the horſe cannot eat his food on account of the tenderneſs of the parts; in all recent colds, attended with rheums or defluctions about the throat, eyes, &c.; in recent ſwellings of the glands about the throat, jaws, &c.; in the jaundice, inflammations of the lungs, pleura, ſtomach, inteſtines, and other viſcera; in apoplexy, vertigo, or giddineſs; and in all diſorders where the head ſeems affected; in the beginning of impoſthumations, or collections of matter in any part of the body, attended with great pain; in plethoric or full habits of body, where proper exerciſe has been long neglected; and when a horſe becomes breathleſs on the leaſt exerciſe.

On the other hand, bleeding is to be avoided, unleſs in very urgent caſes, in all extremes of very hot or very cold weather, and whilſt a horſe is overheated from violent exerciſe; in all caſes of extreme lowneſs of body, or weakneſs, through fatigue, diſeaſe, &c.; after all evacuations by purging or *ſcouring*, diabetes, or profuſe ſtaleing, loſs of blood, from great wounds, or profuſe ſweating. Bleeding is likewiſe to be avoided, when impoſthumations, or collections of matter is once formed properly in any part of the body; likewiſe during the time horſes are moulting in the autumn.

Thus, I have endeavoured to ſhow the principal caſes where bleeding is neceſſary, and likewiſe where it ought to be avoided; no doubt, particular caſes and accidents may, beſides thoſe above mentioned, happen, when bleeding may be neceſſary, but theſe, from what has been ſaid upon the ſubject, will readily occur to the judicious practitioner.

CHAP.

CHAP VII.

OBSERVATIONS

ON

ROWELS.

ROWELS, for horſes, anſwer the ſame purpoſe as iſſues in the human body; the method of introducing them is by making an inciſion through the ſkin, about three-eighths of an inch long, and then ſeparating the ſkin from the fleſh with the finger, or with a blunt horn, all round the orifice, as far as the finger will eaſily reach, then introducing a piece of leather, very thin, ſhaped round, about the ſize of a crown piece, having a large round hole in the middle of it; previous to introducing the leather, it ſhould be covered with lint or tow, and dipped in ſome digeſtive ointment; a pledget of tow, dipped in the ſame ointment, ſhould likewiſe be put in the orifice, in order to keep out the cold air: The parts around it ſoon ſwell, which is followed with a plentiful diſcharge, from the orifice, of yellowiſh ſerum or lymph; and, in two or three days at moſt, the diſcharge turns into thick groſs white matter: The rowel is then ſaid to ſuppurate.

Theſe artificial vents act by revulſion or derivation; and hence they become of great uſe in many caſes, as they empty the ſurrounding veſſels by a regular flow diſcharge of their contents, and are even of great ſervice when there is a redundancy or fulneſs of humours in general, which may require a gradual diſcharge, in preference to greater evacuations by purging medicines, &c. Rowels ſhould be placed (eſpecially in ſome particular caſes) as near the affected part as poſſible; and, at all times, they ought to have a depending orifice, in order to admit of a free diſcharge of the matter that may be contained in them.

The parts where they ought to be inſerted, and where they are found to anſwer beſt, are the belly, inſide of the thighs, the breaſt, and outſide of the ſhoulders and hips; they are ſometimes, but very injudiciouſly, put in between the jaw-bones under the root of the tongue, where they never come to a proper ſuppuration, on account of the conſtant motion of the parts in eating, &c. neither do they anſwer any good purpoſe from being placed in that ſituation. In ſome diſorders it is found neceſſary to put in ſeveral of them at once, in order to make a ſudden revulſion from the parts affected; but this ſhould be determined by the horſe's age, ſtrength, and circumſtances that require them.

But, though rowels are found very beneficial in ſome caſes, yet, like a number of other operations common to horſes, they ſometimes, by the improper uſe of them, become hurtful to the conſtitution, and, in ſome diſeaſes, they frequently, inſtead of ſuppurating, turn gangrenous; hence, the cure proves worſe than the diſeaſe they were intended to remove; thus, in violent fevers, where they are frequently very injudiciouſly applied, they never ſuppurate properly: Whether this proceeds from the quickneſs of the pulſe, together with the violent rapidity with which the fluids in general are then carried through the veſſels, or from the violent agitation in which the whole ſyſtem is thrown, it is difficult to determine; but experience confirms the obſervation, when properly attended to. In ſuch caſes, the ſurrounding parts, where the rowel is placed, ſeldom or never ſwell, (as in the ordinary courſe, when they ſuppurate properly), but appear dry, or much in the ſame ſtate as when they were firſt put in, there is little or no diſcharge from the orifice, and the little that does come is thin, ichorous, and bloody. In ſuch caſes, they ought to be taken out immediately, and the parts well fomented with a ſtrong infuſion of chamomile, or an emollient poultice applied, if it can be properly fixed, and frequently repeated; at intervals, the parts ought likewiſe to be bathed with ardent ſpirits, as that of wine, turpentine, &c. covering the parts from the external air; and, providing there is no fever at the time, two or three ounces of Peruvian bark may be given through the day, either made into balls, or given in a liquid; and this continued till the threatening ſymptoms are removed.

Rowels are of great uſe in carrying off rheums, or defluxions from the eyes; in great ſwellings of the glands, &c. about the throat and jaws, which threaten a ſuffocation; or when the head ſeems particularly affected, as in the vertigo, or ſtaggers, apoplexy, &c. &c.; in recent lameneſs; ſwellings of the legs and heels, attended with a diſcharge of thin ichorous matter, &c.; in large and ſudden ſwellings in any part of the body; or when extravaſations of the fluids have taken place, from blows, bruiſes, &c.; or when a horſe has had a ſevere fall, &c.; and in a variety of other caſes, which will occur to the judicious practitioner.

C H A P. VIII.

OBSERVATIONS

ON

SETONS.

SETONS are of great uſe in carrying off matter from deep ſeated tumors, or abſceſſes in different parts of the body; they ought at all times to be uſed in preference to making deep inciſions into the muſcular parts, which not only disfigure horſes, but ſuch deep inciſions are very difficult to heal up in them, on account of the ſituation of ſome of thoſe tumors, and the horizontal poſition of the body, which is unfavourable in many caſes for procuring a depending opening, in order to carry off the matter, as in tumors on the back, *wi-*

thers, and the upper part of the neck, immediately behind the ears, which are very common. Beſides, the horizontal poſition of the body, the natural reſtleſſneſs and impatience of horſes, renders it impracticable to fix proper bandages on theſe elevated parts; the ſituation of them likewiſe will not admit of proper dreſſings being fixed on them with any degree of certainty of their remaining for any length of time; by which means, the openings made into ſuch tumors or abſceſſes are frequently left bare, and expoſed to the cold air, &c.; hence, ſuch openings degenerate into very foul ulcers, and produce a great deal of proud fleſh, which requires to be repeatedly cut away with the knife, as the ſtrongeſt cauſtics that can be applied are not ſufficient to keep it under.

Setons are introduced by long, thin, ſharp pointed inſtruments, or needles, ſhaped like a dart at the point, and having, at the other extremity, an eye to receive the end of the chord, which is to be left in the tumor. The ſize of the inſtrument may be determined by that of the tumor, and the thickneſs of the chord which is to follow it, and which at all times ought to be ſmaller than the perforation made by the point of the needle. Every practitioner in farriery ſhould always have a number of theſe needles by him, of different ſizes, that is, from ſix to fourteen or fifteen inches long, a little bended on the flat or under ſide. The following is the method of applying them in caſes of tumors, &c. When the matter is found to fluctuate in the tumor, the needle, armed with a chord at the other end, is to be introduced at the upper part of it, and the ſharp point of the inſtrument directed to, and brought out at, the under or lowermoſt part of the tumor, including the whole length of it; or, if needful, through the ſound muſcular fleſh on the under part, in order to procure a depending orifice for the matter to run freely off; the chord ſhould be dipped in ſome digeſtive ointment, and then tied together at both ends with a thread, in order to prevent its ſlipping out; but if, from the length of the perforation, the chord ſhould not admit of being tied together at the ends, a ſmall button of wood, or ſome ſuch ſubſtance, may be fixed at each end; only, from this circumſtance, the chord will require, when ſhifted, occaſionally to be drawn upwards and downwards; whereas, when the ends of it are tied together, it forms a circle, and may always be ſhifted downwards to the lower orifice; when the matter in the tumor appears to be wholly diſcharged, or dried up, and no thickneſs appearing but where the chord is, it may then be drawn out, and the orifices ſuffered to heal up.

When the needle for introducing the ſeton is to paſs near to any large blood-veſſels, or nerves, in order to prevent the chance of their being wounded, it may be concealed in a canula or caſe, open at both ends; and, after an opening is made at the upper part of the tumor, ſufficient to admit the needle, with its caſe, it may then be directed, with ſafety, to paſs the blood-veſſels, &c. it may then be puſhed forward through the canula to the oppoſite ſide of the tumor, and, having only the common teguments to perforate, all danger will be avoided.

The common method of treating thoſe large tumors which are ſeated on the upper part of the neck, immediately behind the ears, generally known by the name of the *pole-evil*, and thoſe which are ſeated on the *withers*, or upper parts of the ſhoulders, is exceedingly improper; they are either allowed to break of themſelves, or are opened the whole length of the tumor on the upper part; in this ſituation, eſpecially in the pole-evil, when the head is always kept in an erect poſition, the matter contained in the tumor cannot be diſcharged from it, but is retained in the bottom of the wound, and expoſed to the external air, &c. it ſoon acquires a moſt ichorous corroding quality, and produces one of the largeſt and the moſt ſordid fiſtulous ulcers that horſes are infeſted with; a great quantity of fungus, or proud fleſh, is ſoon produced; this requires to be repeatedly extirpated with the knife, the loſs of which cannot be again ſupplied; hence the horſe is greatly disfigured, the cure becomes both tedious and uncertain, and is ſeldom radical. In ſome caſes, I have known the vertebrae of the neck affected by the ſharpneſs of the confined matter, forming lodgements there, and, after great trouble and expence, the horſes were put to death.

All theſe kinds of tumors, &c. are eaſily and ſpeedily diſcuſſed by the uſe of ſetons, as above deſcribed, without any loſs of ſubſtance, or disfiguring of the parts, and cured with the greateſt certainty when the operation is properly performed. Of a number of caſes, in my practice, where this operation has ſucceeded with great expedition in curing theſe tumors. I ſhall only mention the following.

About eight years ago, an Arabian horſe, belonging to a gentleman in this place, had a large tumor ſeated a little to one ſide of the *withers*, or upper part of the ſhoulder; it was forwarded by applying emollient poultices; and, as ſoon as the matter was perceived to fluctuate in the tumor, a large ſeton needle, armed with a chord at the other end, (as deſcribed above) was introduced at the upper part of the ſwelling, and brought out at the under or lowermoſt part of it; the matter was diſcharged at the lower orifice in a very ſhort time, the tumor was by that means ſoon diſcuſſed, and, in a few weeks, it was entirely healed up, without any ſcar or blemiſh remaining, farther than a little baldneſs about the lower orifice, occaſioned by the ſharpneſs of the matter, which likewiſe ſoon diſ-appeared, and not the leaſt trace of the diſorder remained.

The other caſe happened about nine years ago: A coach horſe (belonging to a nobleman in the neighbourhood) had a large tumor a little behind the ears, on the neck, which I have formerly obſerved is called the *pole evil;* the tumor extended to both ſides of the neck, and was divided in the middle by the mane; the tumor had been opened on one ſide, in a very ſuperficial manner, by a farrier in the country before the matter in it was ſufficiently digeſted; after applying a few emollient poultices, in order to ripen it, a ſtrong ſeton needle, as already deſcribed, was introduced at the upper part of it, almoſt cloſe to the mane, and, after paſſing it through the bottom of the tumor, which was very deep, the needle was brought out through the ſound muſcular parts below the tumor, in order to procure a ſlopping or depending orifice for the matter to run freely off.

The ſame operation was likewiſe performed on the oppoſite ſide, beginning near the mane, and finiſhed in the ſame manner. In a few weeks the cure was completed. The horſe run for ſeveral years in the ſame nobleman's carriage, without the ſmalleſt veſtige of his former diſorder.

From this method of treating theſe tumors, together with the uſe of alterative medicines, &c. which, in caſes of this nature, ought never to be omitted, they were entirely diſcuſſed, and the perforations made by the needle ſoon healed up, without the leaſt deformity of the parts. I have therefore given the hiſtory of theſe caſes, to ſhow with what facility and expedition ſuch tumors may be carried off, by the uſe of ſetons in preference to the common methods uſed, and even recommended by different authors; ſuch as, after opening theſe tumors by deep inciſions, and pouring into them the moſt corroſive mixtures, made ſcalding hot, together with a long tedious courſe of hot irritating applications, by which the poor animals are kept in the utmoſt torture for a conſiderable time, and, in the end, are ſo disfigured by the loſs of ſubſtance, occaſioned by the cutting away ſo much of the fleſh from the parts, that ſuch horſes are generally rendered unfit for any thing but the meaneſt drudgery.

Deep ſeated abſceſſes are cured in the ſame manner by the uſe of ſetons; after tracing the ſinuſes or cavities of the abſceſs with a long ſlender blunt lead probe, (which yields eaſily without forcing its way thro' the cellular membrane, or taking a direction between the interſtices of the muſcles), the needle, armed with a chord, ſhould follow the direction of the ſinews or *pipes* (as they are commonly called) to the moſt depending part; and, in caſe there ſhould be two or more ſinuſes, which ſometimes happens, each of them ſhould be treated in the ſame manner, in order as I have frequently obſerved, to obtain a depending orifice for a free diſcharge of the matter, and which, being once procured, ſeldom fails of completing a cure.

CHAP. IX.

OBSERVATIONS

ON

PURGING HORSES.

PURGING medicines are given to horſes with different intentions, that is, either to prepare their bodies for active exerciſes, or to cure them of diſeaſes. In the firſt caſe, they are always to be conſidered as in a ſtate of health; in the ſecond, in that of diſeaſe. — Previous to entering on theſe different heads, and that they may be the better underſtood, it will be neceſſary to premiſe a few things relating to the ſtomach and inteſtines, the chyle, the different ſyſtems of veſſels, with their contents, which will ſerve to illuſtrate what may be advanced on the ſubject of purging horſes.

The ſtomach of a horſe, notwithſtanding his ſize of body, is but ſmall, and its coats are thin; the numerous circumvolutions and foldings of the inteſtines, are wiſely ordered, to detain the aliment till ſuch time as it is thoroughly drained of its nouriſhing particles by thoſe veſſels called the *lacteals*, the office of which is, to abſorb or drink up, and to convey the chyle or nouriſhment into the blood; their mouths open into the inner cavity of the inteſtines. The length of the alimentary canal, from the upper end of the gullet to the anus or fundament, is ſaid, by Doctor Bracken, to be about 35 yards. The inteſtines have a motion peculiar to themſelves, which, from its reſemblance to that of a worm, is called *periſtaltic* or *vermicular;* according as this motion is increaſed or diminiſhed, the evacuation by ſtool or dunging is in a great meaſure regulated.

The ſtomach is ſupplied with a humour or juice peculiar to itſelf, which, by mixing with the food, as the ſaliva, bile, and other juices, ſupplied by the pancreas, &c. undergoes a fermentative proceſs of a peculiar nature, which is called digeſtion, and from which the chyle is the reſult.

The inſide of the inteſtines are covered with a ſlimy mucus, which is ſeparated from the glands, in order to preſerve them from being irritated by the groſs food, in its paſſage backwards. The coats of the ſtomach and inteſtines are ſupplied with an infinite number of blood-veſſels and nerves, which are every where diſperſed; and hence they are exceedingly liable to inflammation, irritation, ſpaſms, &c.

Beſides the vaſcular ſyſtem, which includes the arteries and veins, there may be ſaid to be another ſyſtem of veſſels, called *abſorbents*; they are of two kinds, the lacteals, and the lymphatics. The uſe of the former has been already mentioned. The lymphatics are tubes or canals, furniſhed with valves, which convey fluids that are taken up by abſorption on the external ſurface, and from the extremities of the body; they likewiſe abſorb particular fluids from the different cavities of the body, and from the cellular parts, &c. which are by them conveyed into the thoracic duct, where it is mixed with the chyle, and from thence it is carried into the blood.—Let us now conſider the manner in which purging medicines operate on the firſt paſſages only.

The action of purging medicines conſiſts in irritating the ſenſible fibres of the ſtomach and inteſtines, by which means, not only the periſtaltic motion of the latter are conſiderably quickened, but alſo the ſecretions of mucous and lymphatic juices, and vapour, which ouze every where into the cavities of the inteſtines, are increaſed, together with unuſual quantities of pancreatic juice and bile from their ſeveral ſources; hence it will be obvious, how great a quantity of the ſoundeſt humours, or even the chyle that is derived from the food, before it is mixed with the blood, may be carried off by purging medicines, and how much the whole maſs of fluids, in general, may be decreaſed and drawn off.

Since, therefore, purging is occaſioned by giving ſuch medicines as are found, by their irritating quality, to ſtimulate the coats of the ſtomach and guts, and, at the ſame time, quicken the periſtaltic motion of the latter, ſo as to cauſe them to ſhake or throw off their contents by ſtool. It would appear, that the different kinds of purging medicines differ only in degrees of ſtrength, and that they operate no otherwiſe upon the different humours of the body than as they ſtimulate the firſt paſſages more or leſs, and hence cauſe a greater or leſſer evacuation by ſtool. So that, by this operation, we only leſſen the quantity of the fluids, and clear or ſcour the firſt paſſages from any offending matters that may be lodged there. From hence it may likewiſe be inferred, that there is no ſuch thing as elective purgation, that is, by giving certain medicines, we drain off this or that particular humour from the body. This may be farther illuſtrated in the following caſe or example: When a horſe, who has ſwelled legs, or greaſy heels, gets purging medicines, they do not act immediately on the fluids contained in the legs, by carrying them off only, they act by revulſion, that is, by drawing away the fluids, &c. from the ſtomach and inteſtines; thoſe that are in the legs are, at the ſame time, abſorbed or drawn away from the extremities by the abſorbent veſſels, to ſupply the want in the former; and hence the ſwelling in the legs, &c. ſubſide.

It is a common phraſe, when a horſe is any way out of order, to ſay, that ſuch a horſe is *foul in the body*, or that he is full of humours, an expreſſion which can only mean that the horſe is in a bad habit of body; as to a horſe's being full of humours, the propriety of the expreſſion in this ſenſe cannot be admitted, as every horſe, even in the higheſt ſtate of health, properly ſpeaking, is full of humours, as every gland in the body, of which there are a conſiderable number, ſeparates a particular humour, which becomes neceſſary for a variety of purpoſes in the animal oeconomy; thus, the liver ſeparates the bile, the teſticles the ſemen, and every joint in the body has its glands, which ſeparate a particular humour, and ſo of others. Therefore, the expreſſion or phraſe of a horſe's being full of humours, in the common acceptation of it, is improper, and betrays a want of knowledge of the animal oeconomy.

Many people are but too fond of giving purging medicines, and frequently preſcribe them without conſidering whether the caſe may require them or not. Doctor Bracken has a very pertinent remark on this head: "* This ſort of evacuation," ſays he, "ſeems very much to quadrate with the outward ſenſes, and makes the ignorant part "of mankind (whoſe heads are fuller of "humours than their horſes) imagine, that "purging medecines carry off the offending "matter in moſt diſorders, never conſidering the general rule, which ought "ſtill to be kept in mind, viz. That, in "proportion to any one evacuation's being "heightened or increaſed, moſt, or all of "the other natural evacuations, are proportionally diminiſhed."

It is a practice with many people, to ride their horſes very hard before they give them purging medicines, in order, as the phraſe is, to ſtir up the humours, that, when they are afloat, (according to their ideas) they may be carried off by the purging. It has been already obſerved how exerciſe operates on the circulation of the blood, by increaſing its velocity to a great degree, and hence inclining it to an inflammatory diſpoſition, which, in this caſe, is the very worſt thing that could happen, upon the ſuppoſition that the horſe is in a bad habit of body; for purging medicines, when they are given in this ſtate, may occaſion inflammation in ſome of the principal viſcera or inteſtines; or they may bring on a fever, or other diſorders, which, if they do not prove mortal, yet they may, as is ſometimes found to be the caſe, occaſion thoſe diſorders that terminate in blindneſs, incurable lameneſs, or in ſome chronic diſorder, which may render the horſe uſeleſs.

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* Vol. I. page 36.

Riding horſes about, the day after they have got purging medicines, in order to forward their operating, if continued too long, till the horſe is warm, or to produce ſweating, ought always to be guarded againſt, as ſuch treatment not only expoſes them to catch cold, but hinders the operation of the medicine in the ordinary way; for it has been obſerved, that purging medicines ſometimes go off by ſweat, or by urine, which the ignorant and unſkilful are not acquainted with; they therefore conclude, that, as they ſee no great diſcharge of dung, the doſe has been too weak, and give another too ſoon, without allowing a proper interval between them, which, at the ſame time, is made conſiderably ſtronger than the former, which weakens the horſe very much, and a conſiderable time elapſes before he recovers his uſual ſtrength.

I have already taken notice of the great length of the inteſtines; this, together with the horizontal or prone poſition of the body of a horſe, is unfavourable to the operation of purging medicines, which, on that account, remain in the inteſtines a conſiderable time before they operate, being from 18 to 28 or 30 hours, according to the ſtate of the bowels at the time, and, in ſome conſtitutions, even longer. In theſe caſes, it is not adviſeable to give any medicines in order to quicken or haſten their operation; walking exerciſe, but not long continued at a time, together with plenty of warm water, if the horſe will drink, is the beſt and the ſafeſt means to forward their operation. At the ſame time, it will be neceſſary to notice whether the horſe ſtales more than uſual, as purging medicines, as I have juſt obſerved, are found ſometimes to operate in that way, without any conſiderable evacuation by dung. I would likewiſe recommend one general caution in giving purging balls, which is, That the operator ſhould puſh the ball over the root of the tongue, and that he be certain of the balls being ſwallowed entire, and not broke or thrown out of the mouth; miſtakes of this kind have frequently occurred when the ball breaks, one-half, perhaps, is only ſwallowed, the other drops out of the mouth, or it may happen, that the whole ball drops out unperceived. In theſe caſes, it is concluded, from the purge's not operating in due time, that it has been too weak, and, therefore, the next doſe is made conſiderably ſtronger, and hence a ſuperpurgation enſues, attended with great ſickneſs, loſs of ſtrength, and other bad conſequences; therefore, when purging balls are given to horſes, the head ſhould be kept up, and care taken that the ball paſſes down the gullet, which may eaſily be diſcovered ſliding down from the outſide; but, if any doubt remains of its being ſwallowed, a little water may be given the horſe to drink, and one glut or two will put it out of all doubt.

It is a common practice to give purging balls early in the morning, upon an empty ſtomach; this, in ſome conſtitutions, occaſions great ſickneſs, faintneſs, trembling, griping pains, &c. a long while before they begin to operate; to prevent which, I have always ordered, and with ſucceſs, a maſh of bran to be given about an hour or more before the ball, which prevented theſe effects; at the ſame time, the purge operated in the moſt gentle and eaſy manner; and, perhaps, this practice would be adviſeable in all caſes, and in all conſtitutions, when purging medicines are neceſſary.

Another error many people fall into is, That, although a purge operates very well, yet, if the horſe is not very ſick during its operation, they conclude that it will have no effect, nor be of any benefit to the horſe, they therefore give the next purge made a good deal ſtronger, in order, as they ſay, *to ſtir up the humours*; for they conclude, that the ſicker a horſe is under this operation, the humours are the more ſtirred up, and the eaſier carried off by the purge, without conſidering the danger that attends this operation, and how much they expoſe the life of the horſe by ſuch injudicious treatment.

When purging medicines are intended to be given to horſes, it is neceſſary that they ſhould be kept quiet and at reſt for ſome time before, that is, from any very violent exerciſe, and the ſame rule ſhould be obſerved for ſome days after their operation is over, walking exerciſe only excepted. It is owing to the want of theſe, and ſuch like precautions, already mentioned, that ſo many accidents happen daily in the purging of horſes.

It may be now expected, that I ſhould make ſome obſervations upon the practice of purging horſes, by way of preparing them for running, hunting, &c. It muſt be acknowledged there is a difficulty in combating a practice which too generally prevails, although there are a number of facts which will ſerve to demonſtrate, that the purging of horſes indiſcriminately is not neceſſary in order to prepare them for theſe active exerciſes. On the contrary, it muſt, and indeed is, in many caſes, exceedingly hurtful to horſes, on account of the too frequent repetition of them, together with the too ſhort intervals generally allowed between each purge.

It is well known, that horſes, by good feeding, regular exerciſe, &c. may be brought to perform the moſt active exerciſes, and that many inſtances daily occur of horſes both running and hunting, without undergoing any previous preparation by purging medicines; and it is likewiſe well known, that, even when purging medicines are given, ſtill regular exerciſe is found to be abſolutely neceſſary, in order to habituate the horſe to this kind of active labour.

Poſt horſes likewiſe furniſh a further proof of what has been advanced; it is well known how they can be brought to travel very long ſtages, and with great ſpeed, without any preparation farther than good feeding, and inuring them by degrees to this violent labour. Doctor Bracken, who underſtood this ſubject very well, and who was likewiſe a great ſportſman, has been at great pains in exploding this manner of reaſoning, by a variety of ſound arguments, in his ſecond volume of farriery improved, where he has likewiſe given it as his opinion, " That, in moſt caſes, " good feeding, regular exerciſe, &c. will, " in time," ſays he, " make a horſe fit " to ſtart for a plate, without ſo much " noiſe of the virtue of this or that drug " or compoſition to carry off greaſe, and " mend his wind; for, in my humble o" pinion, the jockies are too fond of gi" ving purges to horſes, whereby they " weaken their conſtitution, by cauſing " the fibres of the ſtomach and guts to be" come lax and flabby." And, in the ſame volume, he mentions the following caſe of a mare of his own, " That, he had run

" ſix years with only two purges; nei-
" ther," ſays he, " had ſhe an ounce of
" any kind of medicine during that time,
" except every morning, and moſtly every
" evening, about the bignſs of a pigeon's
" egg of my cordial ball; and, I fancy,
" ſhe performed as well as the moſt of her
" neighbours, for ſhe won eight plates out
" of nine, and four out of ſix every year."

As to the vulgar opinion of humours falling down into this or that particular part of the body, if horſes are not properly purged, &c. before they are put to theſe active exerciſes, it is exceedingly erroneous, and muſt depend on a variety of circumſtances, that ought to be taken into the account.

It may be of uſe to the young practitioner, to explain what is meant by the phraſe *of humours falling down*; but, at the ſame time, I muſt inform him, that this phraſe is ſo generally in uſe, that, when a horſe's eyes are affected, the humours are ſaid to fall down into them, although they are ſituated nearly in the moſt elevated part of the body. But, to explain their falling down to the extremities, I ſhall take a caſe that frequently occurs: When a horſe that is in the higheſt ſtate of health, but too fat and full of juices, &c. and accuſtomed to ſtand much at reſt, is ſuddenly put to violent or long continued exerciſes, his legs, &c. will be apt to ſwell ſoon thereafter; they will perhaps continue in that ſtate for ſome time; they may at laſt break out in running ſores about the heels, and form cracks, ſcabs, &c. &c.; in this ſituation, it is then ſaid that the humours have fallen down to the legs. Here a queſtion naturally occurs, Where were theſe humours before the horſe got this hard ride, or other ſevere exerciſe, and how come they to fall down on this occaſion only? This requires a different explanation.

It has been obſerved, in the chapter on exerciſe, the effects it produces when too ſudden and violent, before a horſe is gradually habituated to it for ſome time previous to his undergoing ſuch violent or long continued exerciſes. All the veſſels being then too full of fluids, they, from the force and rapidity of the circulation during the exerciſe, eſpecially the finer capillary veſſels, admit the groſſer fluids that do not uſually circulate in them; they likewiſe are liable, in theſe caſes, to rupture; hence the fluids they contained are extravaſated into the cellular parts, where they ſtagnate, and being then out of the courſe of circulation, they occaſion a ſwelling. If this happens in the legs, as they are the moſt depending parts of the body, (*the humours are then ſaid to be fallen down*), the ſwelling cauſes a diſtenſion of the ſkin, &c.; the cuticular pores are then enlarged, and admit through them the thinner parts of the fluids to the outward ſurface on the ſkin, which, on being expoſed to the external air, are then changed in their quality, and acquire, according to circumſtances, either a ſoapy, clammy, or greaſy appearance, or a ſharp foetid ichorous quality, that erodes the ſkin, and, by lodging there, form ſmall ulcers.

It ought always to be remembered, that great evacuations weaken an animal body, and, if they are repeated too frequently, and too cloſe upon one another, without allowing a proper interval between each, or, if they are carried to exceſs, which is ſometimes the caſe, the weakneſs in the animal ſyſtem is thereby increaſed, the powers of life are quite overcome, and death follows of courſe.

I would not be underſtood, from what has been ſaid, to mean, that purging medicines are never to be uſed on theſe occaſions—No, I am fully ſenſible of their good effects, when judiciouſly adminiſtered, and horſes properly managed during their operation; but I do not approve of repeating purge after purge, merely becauſe this or that horſe is to run or hunt, without firſt conſidering whether the animal be fat or lean, or whether he has been kept at hard meat, with proper exerciſe, or whether he has run a conſiderable time, or late in the ſeaſon at graſs; all theſe, and a number of other circumſtances neceſſary to be attended to, ought to be duly weighed, and maturely conſidered, before purging medicines are adminiſtered; for example, if a horſe has run long at graſs, and is of a plethoric or full habit of body, evacuations by purging, and diuretic medicines, to a certain degree, are neceſſary, together with length of time, good feeding, and regular exerciſe, to bring his body into that proper habit to enable him to perform, with freedom, ſuch active exerciſes. But, if a horſe is of a lean, low, or dry habit of body, whether it may proceed from the want of proper food, from fatigue, &c. Why reduce him ſtill lower by repeated evacuations of any kind? There is ſuch an inconſiſtency in this practice, that it would not even deſerve to be mentioned, or taken notice of, if it were not too much practiſed every day; for, with ſome people, it is no matter of conſideration with them what ſtate or habit of body a horſe may be in, that is, whether he be of a fat, or full, or lean dry habit of body, ſtill he is ſaid to be full of humours, and which muſt be purged off before he is fit for hunting or running, &c. Horſes, in the latter ſituation, require only good feeding, and regular exerciſe, to ſtrengthen and improve their conſtitutions, which cannot fail of taken place, if the viſcera are ſound, and the horſe otherwiſe in a healthy ſtate. And, even although a horſe ſhould be a little inclined to the full, or what is called the plethoric habit, yet, from the uſe of diuretic medicines, which are commonly given on theſe occaſions, together with regular airings and proper exerciſe, good feeding, dreſſing, &c. he may be brought into that proper habit of body, which will enable him to perform the moſt violent labour with the greateſt eaſe to himſelf, and without any bad conſequences ariſing from it.

But, farther, from the too frequent uſe of purging medicines to horſes, their conſtitutions, though otherwiſe good, are ruined by it, their ſtrength is impaired; it likewiſe contributes to ſhorten their days. Beſides, it frequently happens, that, when they are brought to action too ſoon after ſuch evacuations, their ſtrength being quite exhauſted by the treatment they have undergone, they fail in performing what was expected from them.

From theſe, and a variety of other arguments which might be urged, and which will readily occur to the judicious reader, it is obvious, that repeated evacuations, of any kind, are not neceſſary to horſes, in order to prepare them either for running or hunting; and, if thoſe that are intended for the latter were only allowed the ſpring-graſs, and taken up about the middle or towards the end of June, before the graſs becomes too rank, although it may be rather inconvenient to have them in the houſe at that ſeaſon, yet the owner would find his account in it; the allowance of oats may be but ſmall for ſome time, and which might be increaſed, together with the horſe's exerciſe, as the hunting ſeaſon approached. Running horſes might be treated in the ſame manner, according to the ſeaſon in which they are to run, allowing both a greater length of time in the habitual practice of theſe exerciſes, together with proper feeding, dreſſing, &c. This treatment, together with the uſe of thoſe alterative and diuretic medicines, which are uſually given on theſe occaſions, would render horſes much ſtronger and fitter for theſe active exerciſes, without wearing out their conſtitutions by the repeated uſe of purging medicines, too frequently very injudiciouſly adminiſtered.

I ſhall cloſe this head with a caſe that happened here ſome years ago: Two military gentlemen betted their horſes to run againſt one another on Leith ſands, for a conſiderable ſum, and which was to take place three weeks after the bet; the horſes to be rode by their grooms. Captain R——'s was a poney about 13½ hands; Captain M——'s was a gelding about 15 hands high; both their grooms were bred at Newmarket, and were keen advocates for bleeding and purging, (notwithſtanding both the horſes had been kept on dry food and in the beſt order, and the ſhort interval of time for ſuch treatment) in order to prepare them for running. Captain M——'s horſe was blooded once, and purged twice; Captain R——'s was blooded once, and purged once; they were both ſweated in the ſtable with a great load of cloaths; at the ſame time, their ſtables, though ſeparate, were kept uncommonly hot and cloſe ſhut up, night and day, in the midſt of ſummer. From this treatment, they ſoon loſt their appetite for food, and, in about eight or ten days, they were hardly able to undergo their exerciſe on the ſands, their ſtrength was ſo much exhauſted by the treatment they had undergone, the conſtant and violent ſweating in the ſtable, which, of all evacuations, when continued, weakens a horſe the moſt. In this ſituation, Captain R—— gave up his bett as loſt, together with his poney, for which he had a great value; luckily for him, however, his groom, who was rather inclined to be corpulent, had put himſelf under a courſe of phyſic, &c. in order to reduce his weight; the poney was then put under my care, with another groom to attend him; his cloathing was immediately reduced to a ſingle rugg, the ſtable-windows were thrown open in order to admit freſh air, the poney recovered his appetite for food, together with his ſtrength, ſpirits, and activity; whilſt his antagonist continued under the manner of treatment above mentioned. And, although bets were conſiderably againſt the poney at ſtarting, yet he won with great eaſe, and which Captain R—— frankly acknowledged was intirely owing to the difference of treatment they had been under.

I have hitherto confined my obſervations on the adminiſtering purging medicines to horſes in health, in order to prepare them for active exerciſes, as running, hunting, &c.; it remains to conſider their uſe in diſeaſes.

It would take up too much of the reader's time to enumerate the various forms of preſcriptions that are in uſe for purging horſes, or to confute the ridiculous encomiums beſtowed on the variety of recipes that are handed about with a *probatum eſt*, or atteſtation of their peculiar virtues in carrying off this or that particular humour, &c. as many of theſe compoſitions, when examined, appear to be a confuſed jumble of ingredients, calculated more for the apothecary's profit, than benefit to the patient; and the bad effects ariſing from them in practice, are too apparent in a variety of caſes which occur daily.

The ſubſtances that are uſed for purging or emptying the alimentary canal, may be diſtinguiſhed into two kinds, the lenient which open the belly gently, and the draſtic which purge more briſkly. The lenient ought always to be preferred when there appears any unuſual commotion in the vaſcular ſyſtem, which may eaſily be known from the quickneſs of the pulſe, &c.; for, although purging medicines increaſe the motion of the pulſe during their operation, yet they afterwards abate or leſſen the motion of the blood, by drawing off a conſiderable quantity of the animal fluids by ſtool; they likewiſe clear the inteſtines of ſharp ſtimulating matters or worms, which occaſion an unuſual degree of irritation in the ſyſtem; they likewiſe may be given with different intentions, as circumſtances may require, in ſmall doſes, to keep the body open, and prevent an accumulation of faeces or dung in the inteſtines, which happens in diſeaſes. In caſes of frequent returns of the gripes or cholic, but not during the fit, leſt the guts ſhould then be inflamed, they ſhould therefore be given in the intervals, in order to prevent the return of the complaint.

But, in caſes where it is thought neceſſary to clear the inteſtines thoroughly, in ſtrong robuſt horſes, the draſtic purges may be given, providing there is no great commotion in the circulation of the blood at the time. Purging medicines are of great ſervice in caſes where the inteſtines appear to be loaded with viſcid or thick ſlime, or when it appears, by long continued coſtiveneſs, that the periſtaltic motion of the inteſtines is in ſome degree ſuſpended; in groſs habits, eſpecially where there is any tendency to ſwellings in the legs, attended with running ſores, &c.; in dropſical ſwellings in any part of the body; in diſeaſes of the head, rheums, or defluxions about the eyes; in rheumatic lameneſs, when the pains ſeem to move from one limb to another; in the jaundice; in obſtinate coughs, eſpecially when the horſe is of a full habit of body; in moſt cutaneous diſeaſes, or when a number of ſmall pimples or lumps ariſe on the ſkin, and ſuddenly diſappear again, or when the lumps diſcharge a ſharp fluid of an ichorous quality; in plethoric or full habits, when the horſe is intended for violent or active exerciſes, as running, hunting, &c.; in caſes where is it judged neceſſary to leſſen the general maſs of fluids, or to divert them from flowing to any particular place in too great a quantity, as in inflammations of the lungs; in this laſt caſe, liquid purges are moſt proper, as they operate more expeditiouſly. In very delicate conſtitutions, rhubarb ſhould conſtitute the greateſt part of their purging medicines; they are likewiſe moſt proper in caſes of want of appetite; no doubt there may be other caſes where purging medicines may be neceſſary; but theſe muſt depend on the diſcretion and judgment of the preſcriber.

On the other hand, it will be prudent to avoid giving purging medicines during extreme cold weather; likewiſe in all feveriſh complaints, when the pulſe beats ſtrong and quick, till ſuch time as theſe ſymptoms are conſiderably abated; in all caſes of extreme weakneſs, whether ariſing from fatigue or long continued diſeaſes; in all lean dry habits, unleſs there is reaſon to apprehend it proceeds from worms; in caſes of very obſtinate coſtiveneſs, till ſuch time as that complaint is in ſome degree removed by clyſters, ſoft feeding, &c.; in caſes when a horſe labours under any violent acute complaint; in diarrhea or looſeneſs. Aloetic purges, or thoſe in which aloes enters into the compoſition, are to be avoided likewiſe in ſevere cholics or griping pains, although liquid purges, that are quicker in their operation, and leſs irritating, may be given with ſafety in the intervals, when it is obſerved that horſes are ſubject to frequent attacks of this complaint.

Previous to the giving of purging medicines to horſes, eſpecially to thoſe who have been kept on hard meat, it will be prudent to keep them from all violent exerciſes for ſome days before the purge is given. If they are fat, and of a full habit, it will be neceſſary to draw ſome blood, to lower their feeding, and to give them that which is ſoft and relaxing, as boiled barley, maſhes of bran, malt, &c. When horſes are to be purged at graſs, no preparation is neceſſary, farther than in plethoric or full habits, to treat them as above, obſerving, at the ſame time, that they be not coſtive, as this frequently happens although feeding on graſs; in that caſe, they are to be taken into the ſtable, and treated as if they had been on hard feeding.

In giving purging medicines to horſes, it will always be moſt prudent to begin at firſt by giving mild lenient purges, in order to find out the ſtrength of the conſtitution, &c. as very ſtrong robuſt horſes, to appearance, are ſometimes eaſier purged than thoſe of a more delicate make; and it frequently happens, that the ſame horſe is eaſier purged at one time than at another, according to the ſtate of the ſtomach and inteſtines at the time the purge is given.

Mild purges are therefore much ſafer at all times, and of more benefit to the conſtitution, than too ſtrong ones; for the latter cauſe too great an irritation of the ſtomach and bowels; hence follow griping pains, great ſickneſs, &c. and ſometimes inflammation of the inteſtines; they likewiſe may occaſion a ſuperpurgation, by which the bowels are ſo much weakened, that they never afterwards recover their former tone; and hence follow loſs of appetite, general weakneſs, and, perhaps, an habitual diarrhea or looſeneſs.

When it is intended to give mercury with purging medicines, which is neceſſary in caſes of worms, or as an alterative, it is proper to give the mercury in the evening, and the purging-ball the next morning, as formerly directed. In this caſe, great care ſhould be taken that the horſe be not expoſed to cold, nor ſuffered to drink very cold water, although he may be indulged with plenty of water milk-warm, mixed with a little oatmeal.

CHAP. X.

OBSERVATIONS

ON

CLYSTERS.

CLYSTERS adminiſtered to horſes, are of greater importance in relieving them from many acute complaints, than is generally imagined; and it were to be wiſhed, that, in place of the more expenſive cordial drenches, &c. which are but too frequently given in moſt of theſe caſes, a ſimple clyſter of warm water, or thin water-gruel, were ſubſtituted in their ſtead; the latter of which would prove of great benefit, whilſt the former too frequently proves hurtful.

Clyſters ſerve not only to evacuate the contents of the inteſtines, but alſo to convey very powerful medicines into the ſyſtem, when perhaps it is not practicable to do it by the mouth; for, although clyſters are only conveyed into the larger inteſtines, and, perhaps, hardly penetrate into the ſmaller, ſtill they are extremely uſeful, by fomenting as it were the latter, and, at the ſame time, by ſoftening the hardened excrement that is accumulated in the former, and rendering it ſo ſoft as to be expelled out of the body, by which flatulencies or other offending matters, that may be pent up in them, are likewiſe expelled; beſides, by their warmneſs and relaxing powers, they act as a fomentation to the bowels; and hence may be of conſiderable ſervice in removing ſpaſmodic conſtrictions in the bowels, carrying off flatulencies, and in preventing inflammation in the inteſtines, &c.; or, by conveying opiates to the parts affected, give ſpeedy relief in cholics, &c. &c.

The uſe of emollient clyſters in fevers are conſiderable, they act by revulſion, and relieve the head when too much affected; beſides, by throwing in a quantity of diluting liquor into the inteſtines, it not only relaxes and cleanſes them, but may be ſaid to cool the body in general; at the ſame time, a conſiderable portion of the liquid is abſorbed and conveyed into the maſs of blood, by which means it is diluted; and, in particular complaints of the bowels, clyſters give almoſt immediate relief, theſe remedies, when judiciouſly preſcribed, paſs directly to the parts affected, as they undergo little or no alteration from the powers of the body. Doctor Sydenham[*] eſteemed clyſters ſo much in fevers, that he affirms he could quiet the too great heat of the blood in the human body at pleaſure, by the uſe of them only; thoſe he recommended were extremely ſimple, generally compoſed of emollient decoction and ſugar, and ſometimes only of water, or of water mixed with an equal quantity of milk.

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[*] Sect I. cap. iv. page 69.

Van Swieten, in his commentaries, vol. V. page 371, on the uſe of clyſters to the human body, obſerves, That "clyſters "cheriſh the bowels like an emollient va- "porous bath, waſh out the foeces, dilute "what is abſorbed by the venal orifices, "and reſolve the concreted humours, by "the ſaponaceous virtue which reſides in "ſugar and honey; and thus, by all theſe "powers conſpiring together, they allay "too great motion of the humours." Hence, therefore, as the diſeaſes of horſes are cured on the ſame principles as thoſe of the human body, the doctrine laid down by phyſicians for the cure of diſeaſes in the latter, are applicable to horſes in ſimilar circumſtances; only it ought to be obſerved, for obvious reaſons, that the inteſtines of horſes ſhould always be emptied of dung by the repetition of clyſters, which have ſomething ſtimulating in their compoſition, previous to the adminiſtering any kind of medicine by way of clyſter.

Nor is the uſe of clyſters confined to medicines only; food and nouriſhment may be conveyed into the ſyſtem in this way, when a horſe is unable to ſwallow any thing by the mouth. This I have frequently experienced in practiſe, and ſupported horſes for ſeveral days together by nouriſhing clyſters, made of thick water-gruel, during violent inflammations or tumours in the throat, till ſuch time as they have been diſcuſſed or ſuppurated.

Thoſe who are not acquainted with the anatomical ſtructure of the body, will no doubt be ſurpriſed at this doctrine, for the inſtruction of whom, I would remind them of what has been ſaid on this head in the chapter on food, where it is obſerved, that the lacteal veſſels, whoſe mouths open into the inner cavity of the inteſtines, abſorb or drink up the chyle or nouriſhment that is produced from the food, and convey it into the maſs of blood. The ſame proceſs takes place when nouriſhment is conveyed into the inteſtines by the *anus* or fundament, only the food requires to be ſo far prepared, broke down, and diluted with water, ſo as to render it fit to be abſorbed by the veſſels mentioned above.

In adminiſtering clyſters, it ought always to be obſerved, that the contents of the clyſter be neither too hot nor too cold, and only milk-warm, as either of theſe extremes will ſurpriſe the horſe, and cauſe him to eject or thorw it out before it has had time to have any effect; previous to introducing the clyſter-pipe, the operator, after anointing his hand and arm with oil, butter, or hogs-lard, (obſerving, at the ſame time, that the nails of his fingers are ſhort,) may introduce it into the rectum, and draw out the hardened dung gradually. This operation, in farriery, is termed *back-racking*,

ing, and becomes the more neceſſary, as it frequently happens that great quantities of hardened dung is collected in the rectum, and which, in ſome caſes, the horſe cannot void eaſily without aſſiſtance of this kind.

The compoſition of clyſters ſhould be extremely ſimple, on that account they will be eaſily prepared, and as eaſily adminiſtered, if the operator is provided with a ſuitable inſtrument for the purpoſe. The generality of clyſter-pipes that are commonly uſed, are by far too ſmall and too ſhort; although it may appear a kind of paradox, yet it is a fact, that a clyſter-pipe of a larger ſize than the ordinary ones, and of a proper thickneſs, is much eaſier introduced into the anus than one that is conſiderably ſmaller. It is likewiſe obvious, that, when the pipe is too ſhort, it renders clyſters of no uſe, becauſe it cannot convey them ſo far up into the inteſtines as is neceſſary to give them any chance of being retained; a ſmall ſhort pipe of ſix or eight inches long, is not capable of conveying the injection to the end of the rectum, which, in a horſe of a middle ſize, is about ſixteen or eighteen inches long. I have frequently obſerved, in giving injections with theſe ſhort pipes, that the clyſter flowed out at the anus, in proportion to the force with which it was injected from the bag or ſyringe; this muſt always be the caſe, eſpecially if the bladder ſhould happen at the time to be full of urine, which frequently occurs, from its being too long retained there by the hardened dung in the rectum preſſing down upon the neck of the bladder, and which prevents the horſe from ſtaleing.

But farther, after the hardened dung is taken out of the rectum by the operation above mentioned, the bladder being diſtended and full of urine, it cannot exert its contracting power immediately, ſo as to expel its contents; it therefore preſſes up the empty rectum, and forms as it were a kind of tumour in it; if the pipe is too ſhort, it cannot reach beyond this riſing in the rectum, which forms as it were a declivity back towards the anus ; and hence the liquor regurgitates or flows back as ſoon as it is diſcharged from the pipe.

The ſmallneſs of the bag or bladder, which is generally proportioned to that of the pipe, is another very material objection to theſe ſmall inſtruments, as it ſeldom contains one quart of liquid ; from which circumſtance, very little benefit can be derived from the uſe of them in ſuch large inteſtines as that of a horſe. Doctor Bracken, in his firſt volume page 203, has a very judicious remark on the uſe of clyſters ; he obſerves, That "the colon of a horſe "ſeems to be three guts, by reaſon of the "two necks of about half a yard each, "is drawn up into many cells or purſes, "by means of two ligaments, one of "which runs along the upper, and the o"ther the under ſide of it, which, with "the aſſiſtance of a valve or flap at its be-

" ginning, hinder the excrements either
" from returning back into the ſmall guts,
" or falling too ſoon downwards, before
" the chyle or milky ſubſtance prepared
" from the food be ſent into its proper
" veſſels. And, indeed, the caecum or
" blind gut, which is the firſt of the three
" larger guts, ſeems to be ſo contrived in
" the manner of a valve, to hinder the aliment and chyle from paſſing too ſoon
" into the colon ; for, if the aliment and
" chyle were not in ſome meaſure hindered in their paſſage through theſe large
" guts, the body could not be ſufficiently
" ſupplied with nouriſhment.

" The firſt of theſe colons is about a
" yard and a half in length, the ſecond
" about a yard, and the third, or that part
" which joins the rectum or arſe-gut,
" near ſix yards in length ; ſo that the
" colon of a horſe fourteen hands high,
" may be ſaid to be nearly eight yards and
" a half long ; and, from it, along the rec-

" tum or ſtraight gut to the anus, where
" the excrements are diſcharged, is not above half a yard; ſo that it is plain,
" clyſters operate moſtly in the colon; tho'
" I muſt ſay they are given in too ſmall
" quantities; for what ſignifies two quarts
" of liquor in a gut nine yards long, and
" four or five inches diameter, in a natural ſtate; but, in a colick, it is ſo diſtended with flatulencis, that its diameter exceeds ſeven or eight inches, as
" I have frequently obſerved in thoſe dying of that diſtemper."

Large metal ſyringes are frequently uſed for the purpoſe of giving clyſters; but of all the inſtruments ever invented, in my opinion, they are the moſt improper for horſes; the ſhortneſs and ſmallneſs of their ivory pipes, are not only a material objection againſt the uſe of them, but they are apt to tear and wound the gut; for, if a horſe ſhould prove reſtleſs, either from pain, as in caſes of the gripes, or from viciouſneſs, the ſyringe and pipe being quite inflexible, in the ſtruggle to throw up the injection, the gut may be wounded or hurt, by which a diſcharge of blood and other bad conſequences may follow. But, although there was not the leaſt chance of their hurting the horſe, or wounding the gut, yet the force with which they throw up the liquor, always cauſes a ſurpriſe, of courſe a reſiſtance, attended with a vigorous effort to throw it out, which indeed frequently happens before the pipe of the ſyringe is withdrawn, and frequently upon the operator.

The moſt proper inſtrument for the giving of clyſters, is a ſimple bag or ox-bladder, which will hold two or three quarts, tied to the end of a wooden pipe about fourteen or fifteen inches long, one inch and a half diameter where the bag is tied, and of a gradual taper to the extremity, where the thickneſs ſhould ſuddenly increaſe, and be rounded off at the point, and made as ſmooth as poſſible; the perforation or hole through the pipe may be made ſufficiently large, ſo as to admit the end of a common funnel, for pouring in the liquor into the bag. By the flexibility of the bladder at the end of this inſtrument, no danger can happen to the horſe; the clyſter is conveyed ſo far up into the inteſtines that it will be retained; it cauſes no ſurpriſe providing the liquor be neither too hot nor too cold, but milk-warm), as no other force is required to throw it up than the holding the bag a little higher than the level of the pipe; by which means, the liquor flows gently into the gut, without any ſurpriſe to the horſe. After uſing the bag, it may be blown full of wind, a cork put into the pipe, and hung up in ſome dry place, to prevent it from rotting; by which means, it will laſt a conſiderable time.

Clyſters are diſtinguiſhed by different names, which denominate the quality of the ingredients of which they are compoſed, as emollient, laxative, diuretic, anodyne, &c. As the more general uſe of clyſters, in the practice of farriery, would be attended with the moſt ſalutary effects, eſpecially in acute diſeaſes, where the ſpeedieſt aſſiſtance is neceſſary, I ſhall here ſubjoin ſome forms of recipies for compoſing them, together with the caſes in which they may be adminiſtered with advantage.

Emollient Clyſter.

R. 1. Two or three quarts * of thin water-gruel.
Salled oil, and
Coarſe ſugar—of each ſix ounces.

Diſſolve the ſugar in the water-gruel, then add the ſalled oil—Give it milk-warm.

Laxative

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* Engliſh meaſure is always meant.

Laxative Clyſter.

R. 2. Two or three quarts of thin water-gruel,
Glauber ſalts eight ounces,
Salled oil ſix ounces.

When glauber ſalts are not at hand, common ſalt may be uſed in its ſtead.—A great variety of recipes might be added for making clyſters, compoſed of the infuſion of different herbs, ſeeds, &c. but, as the above ingredients are always eaſily got, they will be found to anſwer all the intentions required under this head, which is to ſoften the hardened excrements, to lubricate the inteſtines, and, by exciting a gentle ſtimulus, promote a free diſcharge of their contents, which, when once obtained, ſeldom fail of giving relief in inflammatory caſes, ſpaſms, &c.

Purging Clyſter.

R. 3. Infuſe two ounces of ſenna in two quarts of boiling water, ſtrain it off, then add
Syrup of buckthron,
Common oil,—of each four ounces.

This clyſter will operate more briſkly than the former, and, on that account, may be preferred when an immediate or ſpeedy diſcharge is neceſſary.

Anodyne Clyſters.

R. 4. The jelly of ſtarch, or infuſion of lintſeed, one pint, liquid laudanum, one ounce, or about two table ſpoonfuls.

When there is reaſon to apprehend inflammation in the bowels, opium may be given in place of laudanum, from 20 to

30 grains, in proportion to the urgency of the ſymptoms; it ought to be well triturated or rubbed in a mortar, with a little of the liquid, till it is thoroughly diſſolved. The ſmallneſs of the quantity of liquid here recommended, gives it the better chance of being the longer retained, as the good effects to be derived from the opium depend entirely on this circumſtance. This clyſter is proper to be given in violent gripings, attended with purging, in order to blunt the ſharpneſs of the corroding humour, and to allay the pain uſually attending in ſuch caſes. The ſtarch will in ſome meaſure ſupply the deficiency of the natural mucus, or covering of the inteſtines, which has been carried off by violent purging; it may be repeated, if the ſymptoms continue violent, only diminiſhing the quantity of laudanum, or of the opium.

Nouriſhing Clyſter.

R. 5. Thick water-gruel three quarts.

When clyſters of this kind are found neceſſary, they may be given four or five times in the day, according as circumſtances may require; they are of conſiderable ſervice in caſes where the horſe cannot eat ſufficiently to ſupport himſelf, nor ſwallow any thing, from inflammation of the throat, jaws, &c. or in convulſions, attended with a lock'd jaw, &c.

Diuretic Clyſter.

R. 6. Venice turpentine, two ounces; Caſtile ſoap, one ounce; diſſolve the ſoap in two quarts of warm water, then add the turpentine, after it has been well beat up with the yolks of two eggs.

This diuretic clyſter is of great uſe in the ſtrangury, and obſtructions in the urinary paſſages; and, as it is immediately applied to the parts affected, it ſeldom fails of giving relief, and has a much better effect, when preſcribed in this manner, than when given by the mouth, as it then mixes with the whole maſs of fluids, it may loſe a conſiderable portion of its diuretic quality before it reaches the kidneys; but, by being adminiſtered in the form of a clyſter, it is readily abſorbed by the neighbouring veſſels, and promotes a free diſcharge of urine.

It would be needleſs to add more forms of clyſters, as thoſe above mentioned will anſwer moſt caſes, without any material alteration, but what may be eaſily ſupplied by the judicious practitioner.

There are a variety of caſes where clyſters may be adminiſtered with great ſucceſs, beſides thoſe already hinted at, as in inflammatory fevers, ſpaſmodic conſtrictions, and cholicky complaints in the bowels; in recent coughs, apoplexy, convulſions, paralytic complaints, ſwelling of the belly, whether from air pent up in the bowels, or from hardened excrements; in caſes where horſes are troubled with worms, as the aſcarides which lodge in the lower part of the inteſtines, or when bott-worms are obſerved ſticking in the anus, or voided with the dung; in very coſtive habits, before laxative or opening medicines are given by the mouth; in wounds which penetrate deep into the muſcular or tendenous parts, or in the belly, &c.; in inflammation of the eyes, or when the head ſeems particularly effected; in inflammatory ſwellings on any part of the body, when a horſe cannot ſwallow any food, &c. whether it proceeds from ſpaſm in the muſcles of the throat, inflammations, or ſwellings. Clyſters compoſed of mucilaginous ſubſtances, as ſtarch, lintſeed, &c. are of great benefit in violent diarrhoeas or looſeneſs, whether it proceeds from a natural diſcharge, or from too ſtrong purging medicines.

It ought always to be remembered, that clyſters ſhould be repeated frequently, till ſuch time as the diſorder for which they are given is either removed or greatly abated. This injunction may be the more readily complied with, as the adminiſtering clyſters to horſes is not attended either with much trouble or diſturbance to them.

Before I conclude this chapter, I would make one obſervation, which is this; it frequently happens in colicks, and other complaints in the bowels, that a horſe will dung frequently, probably from pain, &c. but in a very ſmall quantity at once; at the ſame time, what he paſſes may appear ſoftiſh or looſe. In ſuch caſes, the practitioner may be told that clyſters are unneceſſary and ſuperfluous; this, however, ought not to prevent him from preſcribing them, as, in ſuch caſes, the flatulencies which occaſion the diſorder may be ſeated in the colon, where the excrements at the ſame time are extremely hardened; and it frequently happens,

pens, that, after the ſecond or third injection, they are diſcharged in ſuch a quantity, and in ſuch a ſtate, as to ſurpriſe thoſe who were juſt before deriding the giving clyſters. I have frequently had theſe prejudices to combat with, for farriers frequently have as troubleſome nurſes to deal with, as the phyſicians ſometimes complain of, and who are no leſs ready in their inſinuations where they are attended to.

C H A P. XI.

OBSERVATIONS

ON

DRINKS OR DRENCHES.

IT has been the practice amongſt farriers to diſtinguiſh their formulae of medicines, or *recipes*, as they are called, by the titles of cures for particular diſeaſes; and this practice has been too much followed, even by authors who have treated on the diſeaſes of horſes. Hence it happens, that many people, if they can but diſtinguiſh one ſymptom which is ſaid to attend any particular diſeaſe, immediately apply to their receipt-book for a cure, without troubling themſelves any farther

ther in inveſtigating the cauſe, the nature, and the various ſymptoms attending different diſeaſes, that have a reſemblance to one another; hence, very groſs miſtakes too frequently happen. Thus, I have known pleuritic complaints taken for the colick or gripes, on account of ſome of the ſymptoms in the latter that are likewiſe attendant on the former complaint, and treated according to that pernicious method too much followed in caſes of colick, by giving hot irritating medicines, ardent ſpirits, &c. &c. till the miſtake has been diſcovered when too late to admit of a remedy. The only ſymptom that is common in the two caſes now mentioned, and which are in ſome reſpects ſimilar, is that of the horſe's lying down frequently, and riſing up ſuddenly; but there are other ſymptoms which diſtinguiſh the one from the other, and may eaſily be perceived by an attentive obſerver; for inſtance, pleuritic complaints are more or leſs attended with a ſhort troubleſome cough, which colick pains are not. It ought, therefore, to be a general rule with every man who takes it upon him to preſcribe medicines for the diſeaſed, to conſider every ſymptom with the greateſt attention, and to compare them with thoſe that are in any reſpect ſimilar in other diſeaſes; and, when he has carefully compared them together, he will be able to make a proper diſtinction, and, in a great meaſure, to determine the true ſeat of the diſeaſe, ſo as that he may apply the proper remedies. At preſent, I ſhall not proſecute this ſubject farther, as it will fall to be treated more properly under the head of the different diſeaſes.

As the method of giving drinks or drenches to horſes is generally underſtood, I ſhall only obſerve, that great care ſhould be taken to compound them properly, and not to mix drugs of oppoſite qualities, which do not unite or mix intimately together. From not attending to this circumſtance, the drenches which are frequently given to horſes, are ſo very nauſeous and diſagreeable, that they will not ſwallow them; on this account, they are rejected and ſpilt in the adminiſtering, or, when ſwallowed with reluctancy, they occaſion ſuch a nauſea or ſickneſs, that they too frequently increaſe rather than alleviate the complaints they are intended to remove. Thus, when balſams are adminiſtered, if they are not properly blended with ſome mucilaginous ſubſtances, they ſwim intire on the ſurface of the liquid in which they are given; and hence they are poured into the mouth in their original form, the pungency of which irritates the membranes of the mouth and throat, and occaſions violent coughing, they are ſpilt in the ſtruggle, and the horſe may prove ſhy afterwards to take any thing that is forced upon him in the form of a drench; all rough ſubſtances, hot ſpices, ardent ſpirits, wines, powders, &c. produce this effect when they are not properly compounded; and I have frequently known pieces of ſolid gums, as large as a wall-nut, forced ſorced upon horſes in a drench, from the preſcriber's not knowing how to diſſolve, or neglecting to reduce them to a powder. Venice or common turpentine (when good of its kind) is frequently preſcribed to horſes with ſucceſs, when properly prepared; yet, when they are given in ſubſtance, without any other preparation than being reduced into a fluid ſtate by the heat of the liquid in which they are given, prove extremely diſagreeable by their ſticking about the mouth and throat, and occaſioning violent coughing. The ſame obſervation holds with reſpect to other balſams, &c. Thus, by the injudicious compounding of drugs, the moſt powerful medicines may be rendered of no effect, whilſt the poor animals fall a ſacrifice to ignorance, and are deprived of that aſſiſtance to relieve them under their various diſeaſes, which it is in the power of art to give.

The proper time of adminiſtering drenches is likewiſe of great importance, and, indeed, on this circumſtance, in a great meaſure, depends the whole ſucceſs in practice; for, however well adapted the compoſitions may be at a certain particular period of a diſeaſe, to remove or to mitigate it, yet, in certain caſes, the very adminiſtering of medicines in the form of a drench proves hurtful, particularly when the throat, jaws, &c. are ſore, ſwelled, and inflamed, the forcing a drench on a horſe in this critical period is followed with the moſt violent ſymptoms; and I have frequently obſerved a ſimple ſolution of nitre in water, ſweetened with honey or molaſſes, given in the above caſes, occaſioning the moſt violent coughing, trembling, panting, &c. inſomuch, that the poor animals were like to drop down, merely from the acute pain they ſuffered from adminiſtering any thing by way of a drench in this critical period; the very poſition a horſe's head is put in to receive a drench in theſe caſes, creates to him the moſt exquiſite pain, from the diſtenſion the muſcles of the throat, &c. undergo, when the head is held up by force, at a time when theſe muſcles, &c. can hardly bear to be touched by the fingers even in the gentleſt manner.

From what has been now obſerved, it will be evident how highly imprudent it is even to attempt the giving food or medicines by way of a drench in theſe caſes, till ſuch time as the ſwelling, inflammation, &c. are abated ; and even then no medicines ſhould be given but ſuch as are of the emollient kind, and, at the ſame time, well blended with mucilaginous ſubſtances, as the infuſion of lintſeed, ſolution of gum-arabic, or the yolks of eggs, as theſe ſubſtances ſheath or blunt the pungency or ſharpneſs of the drugs that are adminiſtered.

As all herbs, ſeeds, &c. of vegetables, yield their virtues readily to water, they ſhould be infuſed in that which is boiling, and the thin parts drained off for uſe ; balſams ſhould be incorporated with mucilages; gums ſhould be powdered or diſſolved; and all drenches ſhould be made as agreeable as poſſible, and ſweetened with molaſſes or honey.

C H A P. XII.

OBSERVATIONS

ON

BALLS.

BALLS for horſes are ſimilar to the pills that are adminiſtered to the human body, and are intended to convey thoſe ſubſtances in that ſolid form into the ſtomach, which cannot, (or at leaſt is not proper) to be done in the form of drenches.

What has formerly been obſerved with reſpect to drenches, may likewiſe be applied to balls in the general practice of farriery; they are diſtinguiſhed by the appellation of cures for ſuch and ſuch diſeaſes, and too frequently given with as little caution ;the ſame conſequences follow as upon the miſapplication of drenches ; and hence, errors in practice too frequently occur in preſcribing them.

Balls ſhould be made of an oval ſhape, and about the ſize of a ſmall egg, but longer, and conveyed over the root of the tongue by the hand. To perform this operation with eaſe to the horſe, the operator's fingers ſhould be extended and ſurrounding one end of the ball, the whole hand and thumb muſt be contracted inwards, in order to occupy as little ſpace as poſſible, the ball is then to be puſhed over the root of the tongue; the ſmaller the hand is, the ball will be given with more eaſe both to the horſe and to the operator. In order to prevent the fingers, &c. from being hurt by the teeth, an iron inſtrument covered with cloth (which is known to moſt grooms under the denomination of a *balling iron)* is put into the fore-part of the horſe's mouth, which keeps it at a proper wideneſs, having an opening of an oval form, ſufficient to admit the operator's hand and arm; at the ſame time, the tongue ſhould be drawn a little out, and held to one ſide by the other hand, and kept cloſe to the under jaw, which poſition contributes greatly to facilitate the operation; the inſtant the ball is delivered, the tongue muſt have its freedom, as it is neceſſary in the action of deglutition. I would here caution the operator, that he does not pull the tongue too far out of the mouth, without preſſing it down upon the lower jaw, and keeping it in that poſition by graſping the jaw at the ſame time; for, if he holds the tongue ſingle by itſelf, as horſes are apt to ſtruggle much in theſe caſes, he may hurt the tongue conſiderably, inſtances of which have occurred by ſuch practices; or the muſcles of it may be ſo much ſtrained, as to prevent the horſe from ſwallowing any thing but with the greateſt difficulty for ſome conſiderable time afterwards.

The adminiſtering of medicines in the form of balls is preferable in moſt caſes to that of drenches, as the operation of giving them, when rightly performed, gives the horſe no fatigue; the doſe preſcribed is conveyed with certainty into the ſtomach, without any diminution or loſs of its quantity.

Farriers have one great advantage in adminiſtering medicines to horſes, viz. That, if they are properly compounded and adapted to the diſeaſe, once they can convey them into the ſtomach, they cannot be thrown up again, the ſtomach not poſſeſſing the power of vomiting. From the ſame cauſe, on the other hand, the effects of hurtful or injudicious preſcriptions muſt be pernicious in their conſequences.

In compounding balls, after the ingredients are properly prepared, they muſt be made into a ſtiff paſte, by the addition, if neceſſary, of balſams, ſyrups, mucilages, molaſſes, or honey, the maſs then divided into one or two balls of a proper ſize, according to the doſe preſcribed. It is likewiſe neceſſary, when they are to be kept for any length of time, to have them tied up in a bladder, and rolled in ſome dry powder, as flour, liquorice, &c. in order to prevent them from ſticking together.

It is common to make up large quantities of balls for horſes in too great a maſs at once; this requires attention; for, if great care is not taken that the different ingredients are thoroughly incorporated with the general maſs, they will be unequally divided, too great a proportion of one ingredient being in one ball, and too little in another; therefore, when any preſcription that requires nicety in the doſe is recommended, every ball ſhould be made up ſeparately, with the exact quantity preſcribed in each, as in purging balls, &c.

CHAP. XIII.

OBSERVATIONS

ON

DIURETICS.

UNDER this head are included thoſe medicines whoſe moſt remarkable properties appear in their increaſing the diſcharge by urine, or which are ſaid to remove obſtructions in the urinary paſſages.

They are ſuppoſed to lubricate or ſoften the fibres which compoſe the urinary glands and canals, and, by their attenuating and deterſive properties, rarify and thin viſcous or thick humours, ſo as to render them fit to paſs through theſe canals, which they could not do in a viſcid ſtate; but, whichſoever of theſe ways they operate, it is well known that they are of ſingular uſe in promoting the diſcharge by urine, by which diſeaſes are not only frequently carried off, but actually cured with expedition; and, in many caſes where purging medicines are preſcribed, diuretics would be much more preferable, as they may be uſed with greater ſafety, more eſpecially when it is conſidered that the chief effects of either of theſe preſcriptions tend only to leſſen the quantity of fluids in the body. Hence it will appear how ſalutary and beneficial medicines of this kind are to horſes in a great variety of caſes, but more particularly in thoſe where any obſtruction has taken place in the urinary veſſels, attended with difficulty in ſtaleing, a complaint which horſes are very ſubject to, owing to a variety of circumſtances. From this conſideration, it will likewiſe be obvious how neceſſary it is to allow horſes, which are upon a journey or travelling long ſtages, to ſtand ſtill at times, in order to let them make water; from a neglect of this kind, many horſes are killed; for, when the bladder has been overful, and diſtended beyond its natural dimenſions, it turns paralytic, and loſes the power of contracting itſelf again for ſome time, ſo as to expel the urine immediately; hence dangerous ſymptoms enſue, which, if not ſpeedily relieved, prove fatal. Beſides, when the urine is too long retained in the bladder, it is not only reabſorbed or taken up again into the maſs of fluids, but, by ſtagnating, it becomes thicker, the more watery parts being carried off firſt by abſorption, the more groſs and earthy parts remaining behind, and the tendency which theſe particles have to concrete may promote the formation of gravel, &c.

Diuretic medicines are moſt frequently adminiſtered in the form of balls, but, in ſome circumſtances, they may be given in the form of powders in the horſes food.

Nitre is not only an alterative, but it acts as a powerful diuretic to horſes, and, in ſome caſes, may be given from one to four ounces a-day, according as circumſtances may require.

To coarſe horſes, or thoſe of robuſt ſtrong conſtitutions, from one to three or four ounces of yellow roſin in powder may be put into their food, and repeated two or three times, at proper intervals, according as it is found to operate in caſes of ſwelled legs, greaſy heals, &c.; and it ought always to be obſerved, that, when diuretic medicines are given, the horſe ſhould be indulged with plenty of water to drink during the time of their operation.

The caſes which require diuretic medicines, and which occur moſt frequently, are when any difficulty is obſerved in a horſe's making water, or when liable to frequent attacks of the ſtrangury, or ſuppreſſion of urine, when the urine appears too thick, turbid, or diſcoloured, whether it be red, yellow, or black; when there are ſymptoms of any latent diſorder, attended with a dulneſs or heavineſs in the horſe's looks, a ſtaring duſty like coat, local ſwellings on any part of the body, as on the belly, ſheath, or legs; running ſores about the latter, commonly called the greaſe, &c.; in caſes where there are eruptions or puſtules on the ſurface of the ſkin, or when the horſe appears itchy, and frequently rubbing himſelf againſt the ſtall, &c.; or in rubbing one leg againſt the other, although no eruption appears on the ſkin; in running thruſhes, cracks, or ulcers about the heels; in baldneſs, or loſing the hair on different parts of the body; in moſt caſes where a courſe of diuretic medicines are preſcribed, bleeding will be neceſſary before they are given. Regular exerciſe muſt by no means be omitted, even during the time they are operating. The uſe of diuretics ſhould not be continued too long at one time, as they weaken the body conſiderably, and, as ſoon as the diſorder for which they were given is removed or abated, they ſhould be left off.

CHAP.

CHAP. XIV.

OBSERVATIONS

ON

GIVING MEDICINES AS PRESERVATIVES OR PREVENTATIVES.

HAVING formerly made a few remarks on the caution that is neceſſary in giving medicines at certain times of ſickneſs or diſeaſe; I ſhall now make a very ſhort obſervation relating to the practice of giving horſes medicines whilſt they are in health, by way of preventing diſeaſes; a practice which, probably, has originated from a ſimilar cuſtom in uſe amongſt the human ſpecies, in taking medicines as preſervatives or preventatives, without any knowledge of their medical qualities, only becauſe the practice has the ſanction of cuſtom.

If a man or a horſe is in a ſtate of health, what more is required, or how can they be made better; health is the moſt proper ſtate of an animal body, and it is not in the power of medicine either to make it better, or to preſerve it in the ſame ſtate. A good medicine given ſeaſonably, when there is an appearance of ſome latent diſorder, or ſome derangement in the body, which would, in a ſhort time, occaſion its breaking out, may prevent it from taking place, by carrying it off. The ſame medicine given in a ſtate of health, will produce an alteration in the ſyſtem, by increaſing or diminiſhing ſome of the natural ſecretions, or diſturbing the animal functions; or, even allowing that it did not produce any of theſe changes, ſtill it leaves the body juſt as liable to the impreſſions of diſeaſe as before. Beſides, the cuſtom of giving medicines too frequently is a bad one; they become habitual to the conſtitution, which renders them totally inefficacious, when neceſſary, or, at leaſt, their effects are greatly impaired. This is but too viſible in many of the human ſpecies, who indulge themſelves in the pernicious cuſtom of drinking drams; hence, what in certain caſes would prove a cordial, loſes its effect upon them. And there are but too many examples of people who have contracted the habit of taking medicines under the titles of ſtomachic cordial, &c. &c. who have injured their health, and impaired their conſtitutions, though otherwiſe naturally ſtrong. Many arguments might be drawn from the analogy that ſubſiſts between the human body and that of a horſe, to ſhow the impropriety of the too frequent or injudicious exhibition of medicines to horſes whilſt they are in health, and the pernicious effects which ariſe from this practice, can hardly eſcape the notice of any but thoſe who are blinded with prejudice.

The medicines which are commonly adminiſtered to horſes, by way of preſervatives or preventatives, are generally compoſed of hot powders, aromatics, ſpices, &c. together with a number of other ingredients of the like qualities, under the denomination of cordials, &c.; theſe are ſaid to heat and invigorate the ſtomach, and thereby promote digeſtion. But, if a horſe is otherwiſe in health, this deſireable end is brought about in a much more natural way, by a moderate wholeſome diet, and regular labour or exerciſe, or, in other words, by proportioning the food to the labour or exerciſe which the horſe undergoes.

There are likewiſe more powerful, and indeed more efficacious medicines, that are too frequently given to horſes in health, under the title of alteratives, which prove of great benefit, when properly preſcribed, in diſeaſe; although, at the ſame time, it ought to be obſerved, that they ſhould never be given but when there is an appearance of ſome latent diſorder.

By alteratives are underſtood the giving of certain medicines, which are ſaid to change the humours or juices of an animal body from a morbid or diſeaſed ſtate to that of health; they have no immediate ſenſible effect, but gain gradually on the conſtitution, and are followed (if the viſcera are ſound) with the moſt ſalutary effects, by promoting the natural ſecretions which had been retarded or obſtructed in their progreſs through the pores of the ſkin: But, in this caſe, a diſeaſe is implied, and, of courſe, ſuch things may be neceſſary.

The medicines given under the denomination of alteratives, are antimony in its different preparations, mercury, ſulphur, aloes, and ſalts. The former of theſe, eſpecially the coarſer kinds, are generally given too frequently, in too great quantities, and in too groſs a ſtate, which ſometimes

times brings on great ſickneſs, or violent purging; and, in ſome conſtitutions, in place of promoting the cuticular ſecretions, &c. they occaſion a great heat and dryneſs of the ſkin, which is frequently ſucceeded with a number of hard lumps, or with blotches, on different parts of the body. Sulphur not only opens the body gently, but it readily makes its way through the pores of the ſkin, and therefore it ought to be uſed with caution, as horſes are very apt to catch cold upon the too liberal uſe of it, which may occaſion a worſe complaint than it was intended to remove. Aloes given in ſmall quantities, by way of an alterative, and too frequently repeated, as is ſometimes the caſe, weakens the ſtomach and bowels, ſo as to bring on a lax, or what is called a waſhy habit of body; it ought therefore to be preſcribed with caution to delicate horſes, and only given to coarſe robuſt horſes, who are of a full habit of body, and newly taken from *late* graſs, or that have been accuſtomed to foul feeding, as grains, boiled chaff, &c.

Salts, eſpecially ſal nitre, ſal prunel, or common ſalt, are the beſt and ſafeſt alteratives that can be given to horſes; they ſeem to agree with their conſtitution, with this advantage, that they require no clothing nor confinement during their operation, nor is the free uſe of them attended with any of the above diſadvantages. But, at the ſame time, it would be abſurd to preſcribe them without ſome apparent cauſe. Nitre is of great ſervice in all inflammatory complaints; it not only allays the great heat of the blood, which is common on theſe occaſions, but it is an antidote againſt putrefaction, to which the fluids of an animal body, in the end of theſe complaints, are greatly diſpoſed; it likewiſe promotes the natural ſecretions, particularly that of urine, and is one of the beſt and the ſafeſt medicines that can be given to horſes on ſuch occaſions. Common ſalt given to horſes, which do not appear to thrive when there are no ſymptoms of an inflammatory diſeaſe, has a very good effect; it promotes digeſtion, and the natural ſecretions; it makes them take on fleſh and *coat well.*

I would not be underſtood to prohibit the moderate uſe of antimony as an alterative; I have only hinted at the bad conſequences on giving the coarſer kind ill prepared, and frequently as injudiciouſly preſcribed. The antimony that is coarſe and black like gunpowder, ſhould always be rejected. The beſt antimony is ponderous, and compoſed of long ſhining ſtreakes like needles; it ought always to be levigated into the fineſt powder.

CHAP. XV.

OBSERVATIONS
ON
MOULTING OR CASTING THE HAIR.

FROM a variety of circumſtances obſervable about horſes towards the end of autumn and beginning of winter, it would appear, that ſome particular change ſeems to take place in their conſtitutions, which, at the ſame time, is attended with a degree of faintneſs or weakneſs peculiar to that ſeaſon. This may ariſe from a variety of cauſes combined together; but the principal one, I apprehend, may proceed from that of moulting; for, although horſes in general do not caſt their coats of hair at this ſeaſon as they do in the ſpring, yet, as a conſiderable change takes place on the thickneſs and length of their hair at this period, it may properly be called their moulting ſeaſon. The Count de Buffon, in his third volume, page 379, ſays, That "horſes of all colours, like moſt animals "covered with hair, moult or caſt their "hair every year, commonly in the ſpring, "and ſometimes in the autumn; as they "are then weaker than at any other pe-"riod, they require more care, and ſhould "be more plentifully fed." As this obſervation of the Count's is in the general, and not limited to any particular climate or country, I ſhall juſt offer a few hints on the appearances which attend the moulting of horſes in this country, with the diſeaſes that prevail at this period.

It would be tedious to particularize the various ſituations in which horſes may be kept, fed, and worked, &c. and to take notice of their caſes ſeparately, and the diſeaſes that may follow on the difference of treatment they may be expoſed to; the hints that are here offered may ſuffice at preſent, as they may lead to farther diſcoveries and improvement in the knowledge of the diſeaſes of horſes at this period.

As thoſe horſes that are kept in warm ſtables, and well fed through the winter, are hearty and vigorous in the ſpring, when the ſeaſon is gradually turning milder and warmer, their moulting at this ſeaſon is not attended with that faintneſs, &c. to which they are liable on their moulting towards the end of autumn. The reaſon of this is obvious; the food of horſes in the ſpring is dry, and free from all ſuperfluous moiſture, of courſe, it then produces richer and better nouriſhment; hence, they are more lively, active, and vigorous; to which cauſe may likewiſe be added the change of the ſeaſon which then takes place, and which is more agreeable to their conſtitutions,

tions, and contributes greatly to chear and enliven them.

But, towards the end of autumn, it is very different with the generality of horſes, and even with thoſe that are kept in the beſt manner, but more eſpecially with thoſe who have been fed with new hay, new grain, or with the late graſs, and, at the ſame time, are compelled to undergo ſevere labour, or active exerciſes; ſuch food, at this ſeaſon, abounding with too much water, produces leſs nouriſhment, and fills the veſſels with what may be called a ſuperfluity of watery fluids; this cauſe alone will produce a general laxity of the muſcular fibres of the whole body; and, in this laſt caſe, it increaſes that languor and weakneſs which ſo generally prevail during the time of moulting.

It is obſerved, that thoſe horſes who are kept in warm ſtables, and well fed, moult early in the ſpring; thoſe that run abroad at graſs moult much later. But, if the former ſhould be expoſed to cold winds or rain for any length of time together, by being turned out to paſture, or from their being in any ſhape expoſed to cold weather, after they have once moulted, or caſt their winter coat, that their hair will then grow thicker and longer, the ſame as it does in the beginning of winter, and continue ſo till the ſeaſon turns milder, or that they are kept in warm ſtables; in this caſe, ſuch horſes may be ſaid to have moulted twice in the ſpring.

The coldneſs, chillineſs, and moiſture of the weather, which commonly prevails at this ſeaſon in Britain, may likewiſe be added as another cauſe which contributes to increaſe this general diſorder by occaſioning a conſtriction of the pores of the ſkin; for it is obſerved, at this period, that the hair of the generality of horſes ſtares or *ſtands on end*, (according to the ſtable phraſe;) at the ſame time, their ſkin commonly feels dry and hard, or what is called *hide-bound*; and notwithſtanding they, for the moſt part, ſweat moſt profuſely when they are put to any hard labour, or active exerciſes, merely through weakneſs, and the laxity that then prevails in their conſtitutions; yet that natural inſenſible perſpiration, as it is called, which always takes place in a healthy ſtate through the pores of the ſkin, and which occaſions or produces that ſhining, gloſſy, and ſmooth appearance on the ſkin and hair, ſeems at this period to be almoſt ſuſpended; in ſuch a ſituation and circumſtances, they are diſpoſed, upon any irregularity in the management of them, to fall into diſeaſes of various kinds, more eſpecially thoſe which proceed from obſtructed perſpiration; from this general conſtriction of the pores of the ſkin, that fluid which ought to paſs off by inſenſible perſpiration, is retained in the body; hence, the quantity of fluids in the veſſels being increaſed, theſe, together with the general relaxed ſtate of the muſcular fibres through the whole ſyſtem, derange the circulation; hence proceed thoſe ſwellings of the legs, &c. ſo common at this ſeaſon, and which is frequently attended with running ſores, or what is called greaſy heels, &c. &c.

Horſes who have got the early ſpring-graſs, and afterwards are kept on hay, with a good allowance of grain, and daily accuſtomed to moderate exerciſes, ſuffer no material injury from moulting in the autumn, farther than their being more liable to catch cold at this time, from the alternate changes they are expoſed to, viz. being kept in warm ſtables, and, perhaps, in body cloths, and ſuddenly expoſed to the chillineſs and moiſture of the weather when they go abroad, and before their coats of hair have grown ſufficiently thick to reſiſt the cold.

Horſes, who run at graſs through the ſummer, and whoſe bodies are fat and full of fluids, if expoſed to active or laborious exerciſes, are liable to many diſeaſes about the time of moulting, as the interval from the time they are taken from graſs, and the moulting, is too ſhort to admit of their bodies being brought into that particular habit neceſſary to enable them to perform theſe exerciſes with ſafety to themſelves; they fall into that languor, &c. peculiar to this ſeaſon; and, if ſuffered to ſtand in the ſtable too much at reſt, the habit of body they are in diſpoſes them to fevers, diſorders of the lungs, ſwelling of the legs, glands about the throat and jaws, and running ſores about the former, neither are they able to undergo common exerciſes, without being more than ordinary fatigued and jaded.

Thoſe horſes who run at graſs through the ſummer and autumn, are ſtill in a worſe ſituation, they are not only more liable to the diſeaſes above mentioned, from the very lax habit of body they are in at this time, but leſs fit for active exerciſes of any kind, and require a longer time, even with the utmoſt care and attention, to bring their bodies into that ſtate in which they may undergo active exerciſes with impunity. This period, in particular, proves critical with them, and, if laborious exerciſes are perſevered in, they generally fall a victim to diſeaſe.

It very unluckily happens, that, in the ſituation above mentioned, the means commonly uſed to render the bodies of horſes fit for active exerciſes, or to carry off the appearance of diſeaſe, as ſwelling of the legs, &c. are evacuations of every kind, ſuch as bleeding, purging, rowels, diuretics, &c. &c.; at the ſame time, theſe preſcriptions through impatience of the keeper or owner, are hurried on with too great a precipitancy, that would even affect a horſe in the ſoundeſt ſtate, and moſt hardy habit of body, at any ſeaſon, and reduce him to great weakneſs; the moulting comes on, which ſtill adds to it: In theſe circumſtances, the conſtitution receives ſuch a ſhock, as even that of a horſe cannot reſiſt it; hence many of them fall a ſacrifice to this treatment, and, if they ſhould ſurvive, they are attacked with ſome lingering chronic diſorder, which renders them a burthen and expence to their owners.

The end of autumn likewiſe proves very ſevere on thoſe horſes whoſe fleſh and ſtrength are exhauſted from continued hard labour, or violent exerciſes, as poſting, &c. through the ſummer and autumn; when the moulting comes on in this low ſpiritleſs ſtate of body, it carries off great numbers of them, that by proper care in moderating their labour, together with good nurſing, and feeding them with rich boiled food at this time, their lives might be preſerved. Such ſoft nouriſhing food becomes the more neceſſary for horſes of this deſcription at this particular period, in order to ſupport them under the moulting, as the ſerous or watery parts of their fluids having been drained off by the violent perſpiration they were expoſed to, their muſcular fibres are then too rigid, and the blood too thick, for circulating ſo freely as it ought to do thro' the fine capillary veſſels; hence they are diſpoſed to fall into thoſe diſorders which proceed from this cauſe.

Many of thoſe horſes that are thought to be wore out from poſting, &c. at the end of autumn, when they come to be fed with boiled food, or with potatoes or carrots, and continued ſo through the winter, recover ſurpriſingly. This laſt mentioned food recovers their fleſh; it renews their fluids in general, and promotes all the natural ſecretions; it operates on them nearly in the ſame manner as the ſpring graſs; it purges them gently on the firſt uſe of it, and corrects the whole habit. On changing their food to that which is hard and dry, as oats and beans, and increaſing their exerciſe gradually towards the ſpring, they ſoon become fit for the moſt active exerciſes, without any previous preparation from medicine, &c.

This ſeaſon likewiſe proves deſtructive to aged horſes; when the green food is exhauſted, they are then obliged to feed on hard dry food; in ſome, the digeſtive powers may not only be weaker, but the teeth, at the ſame time, may be defective, in not breaking down the hard food ſo minutely as it ought to be, in order to render it fit for digeſtion, and the nouriſhment of the body. Caſes of this kind have occurred in my practice, from which I conclude, that horſes are ſometimes ſubject to diſeaſe in their teeth, reſembling that of the toothach in the human body, of which I ſhall give the following inſtance. About the period above mentioned, a diſtiller ſent me an aged horſe, in order to inſpect his mouth; the accounts I received of him were, that he ſeemed much inclined to eat dry food, ſuch as hay, oats, &c. but that he no ſooner filled his mouth with the former, and attempted to chew it thoroughly, then he let it drop out; he then took up a freſh quantity, which, after a few turns in his mouth, he dropt in the ſame manner as the former, without being able to chew it ſo ſmall as to ſwallow it; the oats, &c. which he had eat, were paſſed whole; in ſuch circumſtances, his body was conſiderably emaciated from the want of nouriſhment, as the only ſupport he had had for ſome time, was from grains and other dregs about the diſtillery, which he ſwallowed in the ſtate they were given him. On inſpecting the horſe's mouth, I obſerved a part of the outer cheek-tooth, (or grinders, as they are commonly called in horſes), on one ſide of the upper jaw, overgrown, at the ſame time projecting over the under tooth, and ſo long, that it reached the gum on the under jaw; hence, when the horſe attemped to chew his food, this overgrown tooth fretted or wounded the jaw below it; from this laſt circumſtance, it may be inferred, that the pain ariſing therefrom made the horſe give up the attempt of chewing his food, as related above.

After this excreſcence on the tooth was broke off, the horſe eat very heartily of whatever kind of dry food he could come at, he recovered his fleſh, and ſtrength, and became as uſeful to his maſter as formerly. On inſpecting the part of the tooth that was broke off*, it was obſerved to be hallow longitudinally, it likewiſe had a large hole tranſverſely through the enamel, which admitted the thick end of a hen's wing feather; at the ſame time, it had all the appearances that a rotten tooth has, when drawn for the tooth-ach in the human body.——From the caſe now mentioned, it will be obvious how neceſſary it is to inſpect the mouths of horſes when they do not feed well, as even middle aged horſes are ſometimes troubled with ſuch ſharp excreſcences on the teeth; when they riſe on the outſide of the jaw, they wound the cheek in maſtication or chewing; when on the inſide, which is more rarely to be met with, they wound the tongue; when they project beyond the end of the teeth in the oppoſite jaw, as mentioned above, they not only wound the oppoſite jaw, but their length prevents the teeth or grinders from coming ſo cloſe together as they ought to do, in order to break down the food minutely, ſo as to render it fit for digeſtion, to be converted into nouriſhment. In books of farriery, theſe excreſcences are termed *wolves teeth*. It is a pity a good old ſervant ſhould be loſt through the infirmities of age, when his complaint may be ſo far paliated, as to prolong his ſervices; yet many good aged horſes are loſt from not attending to ſuch circumſtances as have been now mentioned; for, although horſes in ſuch ſituations can make ſhift to live on green ſucculent food, whilſt it is good, and which does not require much chewing, and, at the ſame time, perform their uſual labour, yet, when they come to be fed with hard dry food towards the end of autumn, it occaſions a very material change; their loſs of fleſh, &c. ſoon diſcovers that there is ſome defect, either in the digeſtive powers, or in the food not being properly broke down; hence, from the want of nouriſhment to ſupport them under the natural faintneſs, &c. which prevail in the conſtitution of horſes during the time of moulting, it is obſerved, that more aged horſes die at this ſeaſon than at any other period.

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* This tooth I have ſtill by me.

As the diſorders which commonly prevail at this time amongſt horſes, proceed in a great meaſure from catching cold, together with the ſickline ſs attending the moulting, horſes are differently affected, according to circumſtances of habit of body, and the treatment they may be expoſed to; ſome are affected with colds in the head, attended with inflammation and ſwelling of the glands about the throat and jaws, which too frequently, from want of proper care, terminate in the glanders; hence this diſorder is frequent at this ſeaſon: Some horſes are affected with coughs, and other diſorders of the lungs. Rheumatiſm is likewiſe common in different parts of the body, particularly in the neck, which is called the *chords*. Epidemical diſeaſes frequently originate at this period, and continue with more or leſs violence through the winter, and ſometimes till towards the ſpring. Fever is likewiſe common, together with a variety of other complaints, which would be tedious to mention. All theſe diſorders, as I have formerly obſerved, are forwarded from the above circumſtances, together with horſes breathing a heated foul air in their ſtables, and their bodies expoſed ſuddenly to the chillneſs of the weather, before their coats of hair have grown ſufficiently thick to reſiſt the cold, &c. for it is obſerved in thoſe horſes who run abroad in the fields day and night, that they moult much ſooner in the ſeaſon;

by which means they are ſufficiently guarded againſt the ſeverity of the weather when it becomes cold and damp; neither is it obſerved that they are ſo liable to be affected with thoſe epidemical diſeaſes which prevail amongſt horſes that are kept in too warm ſtables. This ſickly diſpoſition amongſt horſes continues with more or leſs violence till ſuch time as the weather turns more favourable and dry, or that the froſt ſets in. It commonly commences, if the weather is moiſt, cold, and damp, about the middle of October, and continues till towards the middle of December: After which, if it is favourable, horſes generally turn more lively and vigorous, and acquire their uſual ſpirit, and healthy appearance, &c.

From the hints now offered, it may be obſerved, that as horſes are generally more weakly at the time of moulting towards the end of autumn than at any other ſeaſon, their exerciſes or labour, when circumſtances will admit, ſhould be moderate. Their feeding ſhould be increaſed in order to ſtrengthen and ſupport them during this period. It ought likewiſe to be of the very beſt quality, as old hay, old grain, *that is*, of the preceding year's growth ; and if the grain that is given them was broke down in a mill, it would prove more nouriſhing than in any other way it could be given them. New hay, or new grain of the ſame year's produce, ought to be avoided, as it is extremely hurtful to horſes, who muſt undergo ſevere labour, or active exerciſes, of which I have formerly taken notice of. Good rubbing and frequent dreſſing are likewiſe of great benefit.

All evacuations, ſuch as bleeding, purging, rowels, &c. ought to be adminiſtered with caution, as ſuch preſcriptions contribute greatly to increaſe that natural weakneſs, &c. formerly mentioned, which prevails in the conſtitution of horſes at this period. At the ſame time it is to be underſtood, that horſes are not by any means to ſtand too much at reſt in the ſtable. Freſh air, with moderate exerciſe, when the weather will permit, being abſolutely neceſſary to promote their health; neither is the proper uſe of the above preſcriptions to be neglected when they are thought neceſſary, and preſcribed with judgment. All the precautions formerly mentioned, with reſpect to their ſtables, ought to be attended to, that they are kept clean, well ventilated, and kept moderately warm. Body-cloths, however neceſſary they may be thought for keeping their coats of hair fine, ſmooth, and clean in the ſtable, ought to be diſpenſed with, as horſes cannot with propriety be rode with them; they muſt therefore be ſtripped the moment they are to go abroad, even although they ſhould happen to be in a ſtrong perſpiration at the time; by which means they are liable to catch cold, &c. And ſurely the health of a horſe is of much more conſideration to his proprietor than the looks or appearance of his coat of hair, eſpecially when it is conſidered, that good rubbing and frequent dreſſing will produce the ſame effect on the appearance of the hair. At the ſame time that this operation will in a great meaſure prevent the conſequences above mentioned, of rendering horſes ſo very liable to catch cold. One ſingle rug or ſheet is ſufficient covering for horſes whilſt in the ſtable: More proves hurtful.

CHAP. XVI.

OBSERVATIONS

ON

LAMENESS.

THE ſteps of a horſe in a ſound ſtate are equal and uniform; a certain harmony ſubſiſting in the motion of the whole body and limbs, any deviation from this harmony, or defect in moving the legs, is termed lameneſs.

Various are the cauſes which may occaſion lameneſs, and frequently a combination of cauſes may take place at one and the ſame time in different parts of the ſame limb;

limb; for inſtance, a prick with a nail in the foot, and a ſtrain in the tendons of the legs, the ligaments of the joints, or in the ſhoulders, happen frequently together; for, as the pain ariſing from the nail in the quick cauſes the horſe to trip and ſtumble in riding, an exertion to ſave the pained foot may, and indeed frequently does, occaſion the ſtraining of the ligaments of the joints, or the tendons, &c. of the legs; and thus a complication of the cauſes of lameneſs is produced. The ſame effects are likewiſe produced from excreſcences growing upon the bones of the legs, which occaſion pain; an exertion of the horſe to ſave the pained limb may occaſion the ſtraining ſome of the muſcles in the ſhoulders, &c. Here it may be neceſſary to make a remark on what is commonly, though very erroneouſly, called a *ſhoulder ſlip*; this phraſe is much in uſe, and may be ſuppoſed to imply a diſlocation or a ſeparation of the ſcapula or ſhoulder-blade from the ribs, a circumſtance that never can happen to this bone, from the nature of its junction with the ribs; for the ſcapula or ſhoulder-bone is not fixed to the body by any articulation or joint, but by appoſition, that is, laid alongſt the outſide of the ribs, and there faſtened by the muſcles, &c. which lie both on the inſide and outſide of the ſhoulder-bone; hence, therefore, it is evident, that the muſcles and tendons of the ſhoulders may be overſtretched or ſtrained, but the bone itſelf cannot ſlip out of its place without a force ſufficient to deſtroy the texture of the muſcles &c. which form the junction with the ribs; the ligament which ſurrounds the articulation where the humerus joins with the ſcapula, at the point of the ſhoulder, is no doubt liable to be injured from ſtrains, &c. in common with other joints of the body; but I never knew nor heard of one inſtance of its being diſlocated in a horſe, although it is poſſible that it may happen. Hence, therefore, the term of *ſhoulder-*

ſlip is improper, and only tends to miſlead the young and unexperienced.

Lameneſs frequently proceeds from tumors growing upon the bones of the legs, or on thoſe immediately connected with them; theſe are commonly termed in horſes ſplents, ſpavins, osſlets, ringbones, &c. and are diſtinguiſhed or named from the particular part of the limb on which they grow. But, as theſe bony excreſcences, (or exoſtoſes, as they are called in the human body), are not limited to particular parts of the legs, but they grow on every bone of the body, and ſometimes are concealed in ſuch ſituations, that it is impoſſible they can be diſcovered, although their effects in cauſing lameneſs, when connected with the parts that are conducive to motion, are very apparent; inſtances of which might be met with almoſt every day, if horſes were more frequently diſſected. Thus, a ſhoulder-bone, which I had carefully preſerved, and which is now in the poſſeſſion of the

Right Honourable the Earl of Pembroke, has an exoſtoſes of this kind, about the ſize of a large nut, on the thinneſt and moſt tranſparent part of the bone on its inſide, which is placed next to the ribs; the horſe was lame for ſeveral years before his death, but the cauſe of his lameneſs could never be diſcovered till after diſſection; this bony excreſcence was ſo ſituated as to preſs upon the middle of the ſub-ſcapulary muſcle, and could not fail to impede its action, and occaſion lameneſs.

Something of the ſame nature as theſe exoſtoſes likewiſe takes place on the ſmall bones of the joints, eſpecially in thoſe of the hind-legs; the oſſeous or bony matter proceeding from ſome morbid cauſe, forming a number of ſmall tumors between the joints, and cementing or joining two or more of theſe bones together, which, by impeding the action of the joint, occaſions lameneſs.

Many people flatter themſelves that they can take off moſt of theſe bony excreſcences, by bliſtering, &c. even after they have acquired their utmoſt ſolidity; but thoſe who are acquainted with the anatomical ſtructure of the parts, the ſolidity and broad baſis of theſe bony tumors, together with the firm connection they have with the bone on which they grow, will readily ſee the impracticability of this method ſucceeding. It is true, in ſome caſes, where theſe tumors have a narrow baſe, they may be chopt off with a chiſſel; but, at the ſame time, it will be evident, that this operation muſt, in many caſes, be attended with conſequences much more detrimental to the horſe than the ſplent, &c. would be in its fulleſt growth; beſides, a caries in the leg-bone may follow from this operation, and the cicatrix that remains will disfigure the horſe more than the excreſcence would have done in its full extent; many ſplents of an uncommon large ſize are daily ſeen on horſes legs, yet they go quite ſound. Hence, therefore, it is obvious, that it is not the ſize or largeneſs of a ſplent that cauſes lameneſs, after its has grown to its full extent, but its interference with ſome of the other parts that are ſubſervient to motion of the legs, where, by its connection, it impedes their motion, and cauſes lameneſs.

It likewiſe frequently happens, that theſe excreſcences grow up between the two ſmall bones on the back part of the fore-legs, and immediately under the tendons, the grooves or hollows that are there formed on the ſurface of the excreſcence, whilſt it is in its ſoft ſtate, by the friction of the tendons, evidently ſhow that they have been impeded in their motion, which will produce lameneſs. In this ſituation, it becomes impoſſible to apply any remedy whatever to remove this excreſcence; beſides, it frequently happens that the leg-bones, in ſuch caſes, are conſiderably enlarged, for which there is no cure; this will be farther evident on inſpecting the bare leg bones, that may be found almoſt in every field where dead horſes are laid; a number of ſuch bones I have now in my poſſeſſion.

Van Swieten, in his fourth volume of commentaries, page 426. has the following remark on the effects theſe excreſcences produce in the human body on their firſt riſing, and which is applicable to the preſent purpoſe in horſes: "But," ſays he, "as exoſ-
"toſes, (that is, bony excreſcences), riſing
"on the outſide of the bones, muſt neceſ-
"ſarily diſtend by degrees the incumbent
"perioſteum, very troubleſome and laſting
"pains will ſometimes follow from thence,
"and ſuch as are exceeding ſharp; but
"yet will ceaſe the ſooner, if the exoſto-
"ſes be pointed." The ſame author mentions a caſe of ſome of theſe exoſtoſes, from M. Petit, which grow upon the leg-bone with a ſharp point, and roſe above the ſurface of the bone the length of four geometrical lines, which, in the beginning, was attended

attended with very ſharp pains, that gradually decreaſed, and at laſt went entirely off, leaving the bony tumor quite indolent.

That the ſame effect is produced by theſe excreſcences growing on the leg-bones of horſes, called ſplents, is very evident from their firſt beginning to riſe on the outſide of the bone, they diſtend or overſtretch the perioſteum which covers the bone; this creates pain, which is followed with lameneſs in horſes; but, when this membrane is either divided, ruptured, or becomes benumbed by the diſtention it has undergone, the pain ariſing from it ceaſes, and, unleſs the excreſcence communicates with ſome other bone, or preſſes on ſome of the parts that are conducive to motion, as the tendons, &c. the lameneſs goes off, although the tumor on the bone remains in its full extent.

Lameneſs likewiſe proceeds from rheumatic pains in different parts of the body, which frequently change from one place to another, and from cramps, ſpaſms, ſciatica, &c. all of which produce lameneſs; the true ſeat of which, in ſome caſes, cannot be aſcertained with any degree of certainty. Other cauſes of lameneſs are more eaſily diſcovered from their external appearance, or the ſymptoms which attend them, as a ſwelling of the parts affected, attended with pain to the animal upon touching them; of this kind are ſtrains or ſprains, whether of the ligaments of the joints, or the muſcles and tendons of the legs and ſhoulders.

Lameneſs likewiſe proceeds from blows, occaſioning contuſions or bruiſes, or from wounds and punctures, from watery or running ſores about the legs or heels, under every denomination whatever, as in theſe caſes the legs are more or leſs ſwelled and inflamed, of courſe they are ſtiff and unfit for action.

Lameneſe likewiſe proceeds from long and continued violent exerciſe, which occaſions too great a waſte of the ſynovia or oily liquor which lubricates the joints; hence they become ſtiff, and, on the horſe's moving, make a crackling noiſe. It is likewiſe produced from a variety of other cauſes, which are confined to the hoofs, as pricks from nails in ſhoeing, wounds in the hoofs from nails picked up in the ſtreets, glaſs, ſharp pointed bones, &c. which penetrate into the quick, from injudicious ſhoeing, and paring the hoofs to exceſs, or ſuffering them to grow too large and long at the toes, by which the feet grow benumbed, a partial contraction taking place at the coronet and heels, or a contraction of the whole hoof, which is commonly known by the name of hoof-bound. This laſt diſeaſe is greatly forwarded by keeping the horſe's legs and hoofs too hot and likewiſe too dry, by means of a great quantity of litter, and, perhaps, hot dung at all times under them.

The practice of the Arabians, formerly mentioned, ought, in this reſpect, to be adopted, which is, waſhing the legs of their horſes frequently through the day with cold water; and, although it be not expreſsly mentioned by the Count de Buffon, from whom the paſſage alluded to is quoted, yet it may be inferred, that the hoofs, at the ſame time, are moiſtened by the water. This kind of treatment is natural to horſes hoofs; at the ſame time, it not only keeps the legs cool, but it contributes to brace and ſtrengthen the muſcular and tendinous fibres, and prevents ſwellings, &c. in them. How differently treated are the Britiſh horſes in this reſpect? no ſuch precautions are ever intentionally uſed to them, but directly the contrary; it may literally be ſaid, that they are compelled at all times (when in the ſtable) to ſtand on a hotbed; at the ſame time, their hoofs are baſted with greaſe, oil, tar, or turpentine, things perfectly foreign, and of a direct oppoſite quality to the intention of applying them; by which means, the generality of fine horſes, that are much kept in ſtables, ſooner or later, become cripples.

Lameneſs likewiſe proceeds from corns, running thruſhes, from gravel inſinuating itſelf between the ſhoe and the ſole of the foot, eſpecially in weak hoofs, or by forming a lodgment there, it at laſt penetrates into the quick which is called graveling.

There is likewiſe another kind of lameneſs peculiar to the hind-quarters, and which occaſions a ſudden jerking of the legs upwards on moving; by ſome it is called *ſtring-halt*; and by others *click ſpavin*. This complaint ſeems to be a particular affection of the nerves of the legs, which cauſes this kind of involuntary motion, for which no certain method of cure has as yet been diſcovered.

From all theſe, and a variety of other cauſes, lameneſs is produced, the true ſeat of which, in many caſes, cannot be diſcovered by any external appearances ; hence, practitioners ought to be very cautious in giving their opinions of the cauſes of lameneſs, before they poſitively determine on the particular ſeat of the diſeaſe, or the cauſe which produces it, without there having a ſufficient or a viſible proof to ſupport their opinion, and be enabled, from the nature of the caſe, to prognoſticate the event, or the ſucceſs, in performing the cure ; for how frequently has it happened, from want of this precaution, together with a too ſuperficial inſpection of the parts, and too haſty a determination as to the ſeat or cauſe of lameneſs, that applications have been made to the ſound parts, whilſt the real cauſe has ſoon afterwards ſhown itſelf to be elſewhere, perhaps in the hoof, to the ſhame and confuſion of the practitioner. Therefore, unleſs the cauſe of a horſe's lameneſs is perfectly evident, it will be prudent to examine at all times the foot of the lame limb firſt with care and attention ; and, if it ſhould ſtill appear doubtful,

ful, to inſpect it next day a ſecond time, and even a third time may be needful, rather than give too haſty or precipitate a determination with reſpect to the ſeat of a horſe's lameneſs; for the foot is always to be ſuſpected, eſpecially after a horſe has been new ſhoed, or has had his ſhoes faſtened, or when the ſhoe lies too flat, and preſſes upon the ſole, or when the ſhoe is made too narrow or too ſtrait for the hoof, or if there is a corn in the foot. A horſe may be lame from a nail, although it be not drove immediately into the quick, by its thickneſs preſſing on the ſoft parts, or from its being bent inwards upon the quick, or, when drove too near, it will raiſe a ſmall portion of the hoof, its own breadth, and force it upon the quick; and this laſt cauſe is the reaſon why horſes are a longer time lame, after ſuch accidents, than when a nail is drove immediately into the quick. A wound by a nail in the fleſhy part of the foot, if timeouſly diſcovered, and properly treated, ſuppurates kindly, and ſoon heals up; but a thin ſplinter, (as mentioned above), when raiſed from the hoof by a nail, and forced on the quick, has more laſting effects, the horſe will be the longer lame; it may be compared to a particle of ſand or gravel in a man's ſhoe, that is conſtantly pinching him, with this difference, that, in the former, it cannot be ſo eaſily or ſo ſoon removed.

From what has been ſaid, it will be evident, that no certain rules can be laid down for diſcovering the true ſeat of lameneſs, in a horſe, from the motion of the body; notwithſtanding, a great deal has been ſaid on this ſubject, by ſome people who have pretended to this diſcovery; for, when any of the parts which are neceſſary to the motion of the body are injured, the adjacent parts will be affected more or leſs, and thus, by a kind of ſympathy, the whole limb, &c. will be affected; thus, a prick with a nail in the foot, will cauſe an inflammation of the whole leg; the ſhooting pains, in theſe caſes, may affect the muſcles of the ſhoulders, ſo as to obſtruct their motion, and, upon touching or pinching theſe parts, the horſe will flinch, and ſhow a ſenſe of pain in them, and a ſtiffneſs in moving forward or ſidewiſe, that will be very apt to miſlead the unwary, and make them conclude that the cauſe of lameneſs is centered entirely in the ſhoulder, when, in fact, theſe are only ſymptoms which proceed from the ſhooting pains occaſioned by the nail in the foot. There are few people, perhaps, who have not experienced ſomething like this in themſelves, from cuts, punctures, boils, &c. in the extremities of the fingers or toes, which frequently occaſion the moſt acute pains in the arms and ſhoulders, &c.

The caution above mentioned will appear ſtill more neceſſary, when it is conſidered that the bony excreſcences, as formerly deſcribed, will excite the moſt acute pains whilſt they are growing, by their extending or ſtretching the membrane which covers the bone, and which is always attended, more or leſs, with ſome degree of inflammation on the part, although in ſome caſes, their ſituation cannot be perceived. And, if I may be allowed to reaſon from analogy, the pain that is produced from ſplents, ſpavins, &c. in horſes, whilſt they are growing, may be compared, in ſome degree, to the pain of teething in children, which continues till ſuch time as the perioſteum or membrane which cover the jawbone is divided or cut by the new tooth.

I have formerly hinted that horſes are likewiſe ſubject to ſpaſms in the muſcles, and to cramps, &c. the real ſeat of which, or part affected, cannot eaſily be aſcertained in horſes from any external appearances; but our own experience of ſome of the like complaints, and deep-ſeated pains, will in ſome meaſure make us ſenſible how painful ſuch complaints may likewiſe be in horſes, and, of courſe, when they are put in motion, will occaſion lameneſs.

Another cauſe of lameneſs ſtill remains to be taken notice of, which proceeds from ill-made ſaddles, or from thoſe that are not properly fitted to the back. This is a conſideration of importance, both to the eaſe of the horſe and the rider's ſafety; for it frequently happens that both ſuffer from inattention to this article; for, if the ſaddle-trees are too wide, and the ſaddle without a crupper, it moves too far forward upon the ſhoulder-blades, by which means the weight of the rider, together with the points of the ſaddle-trees, confining the motion of the ſhoulder-bones, impedes their action; this cauſes the horſe to ſtumble, and frequently to come down; at the ſame time, the cartilaginous ends of the ſhoulder-bones, muſcles, &c. are cruſhed and bruiſed; hence large ſwellings are produced on the ſhoulders or withers, which terminate in fiſtulous ulcers, and which, from the ſituation of the parts, are very difficult to cure, unleſs they are cautiouſly and judiciouſly managed. The other extreme, of having too narrow ſaddle-trees, ſhould likewiſe be carefully guarded againſt, as they bruiſe the ſkin, &c. and occaſion thoſe hard lumps called ſitfaſts, or warbles, which muſt be extirpated with the knife, and, on that account, render the horſe's back tender for a long time.

A ſaddle that is well fitted ſhould preſs equally on every part of the back, the middle or ridge of the ſpine excepted, without touching, preſſing, or even coming near the ſhoulder-blades, which ought by no means to be interrupted in their motion; the ſaddle pannel oppoſite to the hollows that are on each ſide of the ſpine ſhould be bolſtered and well fitted up on each ſide, which will prevent it from moving too far forward on the ſhoulder-blades, even although no crupper is uſed.

I find that what I have recommended in a former treatiſe, (*on Shoeing, and Diſeaſes of the Feet*, with reſpect to the management of the hoofs of horſes), has been greatly miſunderſtood, and that ſeveral people have expected cures from it, which I never promiſed; and, upon its not ſucceeding to their wiſhes, have condemned the practice in general. Some have had boots made for their horſes legs, which they filled with water, in order to keep them cool and moiſt at all times; others have had the pavement in the ſtall taken up under the horſes fore-feet, in order to make a hole, which they filled with clay and water; and all this with a view to reſtore ſoundneſs, &c. to lame and battered horſes. I would here beg leave to obſerve, that, though I have always recommended coolneſs, and a certain degree of moiſture, as moſt natural to the legs and hoofs of horſes, by way of preventing diſeaſes in theſe parts, yet I never once ſaid that ſuch means will cure diſeaſes there, when they have once taken place. It is very obvious that the legs and hoofs of horſes in a natural ſtate, that is, running at graſs, are more expoſed to coolneſs and moiſture than to the oppoſite extreme of heat. When kept in the former ſituation, they are always found to be in the beſt ſtate, both with reſpect to the quality of the hoofs, firmneſs of the muſcular fibres of the legs, and ſoundneſs, &c. ; but, when they are kept too hot, and, at the ſame time, greaſed and oiled, the pores of the hoof are ſhut up, the natural perſpiration is obſtructed ; hence they become parched, dry, hard, and brittle, and greatly diſpoſed to contract or grow narrow in their dimenſions, which affect the ſoft internal parts within the hoof, and hence produce lameneſs. Beſides, great heat, as I have formerly obſerved, when applied to the legs and hoofs, occaſions an accumulation of blood to them ; hence a fulneſs and diſtenſion of the veſſels within the hoofs, and ſwelling in the legs. On the contrary, a moderate degree of coolneſs repels this fulneſs of the veſſels, braces the muſcular fibres of the legs, &c. which keeps them fine and clean limbed, and free from any diſpoſition to ſwelling, &c.

CHAP. XVII.

OBSERVATIONS

ON

BEATING OR ILL-TREATING HORSES.

SELF-PRESERVATION is natural to horſes as well as to other animals; they therefore endeavour to avoid or ſhun every thing that to them has the appearance of danger. This they do, either from natural inſtinct, from what may be called in them memory, if I may be allowed to uſe that expreſſion, or from the impreſſion of fear or pain they have felt on former occaſions, when particular objects preſent themſelves to their view, or on hearing certain ſounds. Thus, fear of pain will reſtrain a dog from taking a piece of meat out of a man's hand, if he has been beat on a former occaſion for attempting it. A ſprightly horſe will be greatly agitated by fear, from hearing the crack of a whip, or upon its being held up to him, becauſe he has ſuffered pain from it formerly.

The reaſon why horſes are generally rendered vicious, is mal-treatment of ſome kind or other on their being firſt handled, and in the breaking; the effects of which remain longer with ſome than with others, according to their tempers or diſpoſitions; for they poſſeſs theſe peculiarities as well as mankind, of which there are conſiderable variety, and which are not neceſſary here to particularize as the method to be obſerved with them in general is the ſame. For, if we wiſh to have them docile and tractable, we will ſucceed much better by familiarity and careſſes and gentle uſage, than by force and chaſtiſement. We ought, in this reſpect, to take a leſſon from the Arabians, whom I had occaſion formerly to quote, and whoſe horſes, it is to be obſerved, are remarkably tractable and docile, and from whom the fineſt horſes in Europe are deſcended. Buffon ſays, in Vol. III. page 368. " That, as the Arabs live in " tents, theſe tents ſerve them likewiſe for " ſtables. The mare and her foal, the " huſband and his wife and children, ſleep " together promiſcuouſly. The infants " often lie on the body, or on the neck of " the mare or foal, without receiving any " injury from theſe animals, which ſeem " afraid to move for fear of hurting them. " Theſe mares are ſo accuſtomed to ſo" ciety, that they ſubmit to every kind of " familiarity. The Arabs never beat their " mares, but treat them gently, and talk " and reaſon with them. They are ſo " careful of them as to allow them always " to walk, and never ſpur them, unleſs the " occaſion be very urgent. Hence, when-

" ever the creatures perceive the rider's " heel make an approach to their ſides, " they inſtantly ſet off with incredible " ſwiftneſs, and leap hedges and ditches as " nimbly as ſtags. If their rider chances " to fall, they are ſo well trained, that they " ſtop ſhort, even in the moſt rapid gallop."

It has been obſerved, that the tempers and diſpoſitions of horſes differ as much as in the human ſpecies, and which ought to be particularly ſtudied and attended to by thoſe who go about them, and more ſo in the perſon who breaks them, whoſe province it is to form their manners and diſpoſitions together with that of their actions; at the ſame time he is to correct them from vicious habits, in the doing of which the greateſt caution is neceſſary: But chaſtiſement with ſeverity is always to be avoided.

We frequently meet with horſes who have been ill uſed in the breaking, that ſcar or bogle at almoſt every object they meet with on the road. This, together with other cauſes formerly mentioned, may proceed from the impreſſion of fear, or whatever it may be called, which remains with them from being beat on ſuch occaſions, or on ſeeing ſuch objects formerly. The animal, for ought we can ſay, knows nothing to the contrary, but that it is the object he ſees before him that inflicts the puniſhment he feels, or apprehends is to follow, from the preſence of ſuch an object before him, and hence endeavours to fly from or to ſhun it. Chaſtiſement, in ſuch caſes, always increaſes the animal's fears, and makes him worſe. But ſoothing words, and ſtroaking his neck, &c. gently, will pacify him, and reconcile him to the object that ſcars him. He ſhould likewiſe be ſuffered to ſtand ſtill till ſuch time as his fear abates; at the ſame time he will naturally uſe another of his ſenſes to ſatisfy his fears, which is that of hearing. If there be nothing to alarm that ſenſe, his fear ſoon ſubſides. The conſtant habit of gentle uſage towards horſes, eſpecially on ſuch occaſions, will baniſh this timidity entirely from them. It is the ſame with horſes in a variety of other reſpects: Thus a ſprightly horſe, once ill uſed, on his being firſt ſhoed, will be afraid of a farrier ever afterwards; and the ſight of a ſmith's forge will always put him in a tremor.

The ſenſe of hearing is very acute in horſes. I have known many of them diſtinguiſh when the farrier was preſent, who ſhoed them, and ſhow all the ſymptoms of fear on hearing his voice only. It will therefore be the intereſt of every farrier to avoid or to prevent the uſing or treating horſes ill on their firſt being ſhoed; for, although he ſhould have a little extra trouble on theſe occaſions, (and which he ought to be paid for) it is of no conſideration when compared to the conſtant trouble and danger in ſhoeing ſuch horſes afterwards.

As horſes thus readily know the voice of individuals, they ſoon learn to diſtinguiſh the tone of ſoothing, or that of anger, in every language where they happen to be ſituated ; and it will be found, that where horſes are accuſtomed to be directed by the ear, that is, by words ſpoken familiarly to them, that they are by far more tractable and pliant than where the whip is always uſed.

The obſervation with reſpect to horſes that ſcar or bogle at objects on the road ought particularly to be attended to, as it is frequently followed with fatal conſequences to their riders, and is ſometimes hurtful to themſelves, as the ſudden or violent exertions made on theſe occaſions have ſometimes produced incurable lameneſs.

I would likewiſe offer one advice to ſuch as are bad riders, or who are not much accuſtomed to it, which is, never to wear ſpurs, for this reaſon, as they are not acquainted with the proper method of ſitting in the ſaddle. They graſp the horſe's ſides and belly tight with their legs and heels; at the ſame time they turn out their toes. From this poſition, the ſpurs, at every jolt of the horſe, are forced into his ſides. Hence the horſe will, as he has been taught, exert himſelf to the utmoſt of his ſpeed, and run off with his rider. The horſe, at the ſame time, will naturally bound and kick, till he frees himſelf from the ſpurs that ſo cruelly torment him.

It is much the ſame with timorous riders on the apprehenſion of any danger. They may be ſaid to communicate the impreſſion of fear to the horſe by their ſuddenly graſping his ſides with their legs and heels, in order to keep themſelves firmly ſeated in the ſaddle. The horſe, naturally expecting the ſpurs, immediately ſets off at full ſpeed.

Many horſes, from a variety of cauſes, are apt to trip and ſtumble when travelling on the road. The whip and ſpurs are too frequently applied by way of chaſtiſing them for this fault. Hence thoſe horſes, who are much addicted to tripping or ſtumbling, ſoon become ſenſible of what they are to expect from a repetition of this blunder; which no ſooner happens, than, in order to avoid the puniſhment they dread, they exert themſelves to the utmoſt of their power to recover their feet, and ſuddenly ſpring forwards or ſideways, to the great danger of unhorſing the rider. It likewiſe frequently happens, that in their attempts to recover themſelves from the firſt ſtumble, that through fear, &c. they often fail in their endeavours, and tumble headlong.

I have hinted above, that there are a variety of cauſes which contribute to make even the ſureſt footed horſe trip and ſtumble at times; and, in the caſes of others, which, when duly conſidered, ought to ſcreen them from chaſtiſement they do not merit.

It has been frequently hinted, that if a ſaddle comes too far forward on the ſhoulders, that this circumſtance, together with the weight of the rider, prevents the free action of the ſhoulder-blades, of courſe the horſe muſt unavoidably trip and ſtumble. Every thing about the feet that makes the horſe go uneaſy, will likewiſe operate to produce the ſame effect as weak hoofs, whether naturally ſo, or occaſioned by bad management. Too ſtrait, or too heavy, thick, ill-formed ſhoes, the nails drove too near the quick, diſeaſes in the feet, as corns, running thruſhes, hoof-bound, cracks in the heels, &c. to which may be added the ſuffering the hoofs to grow too long towards the toe, by which means the horſe's toe ſtrikes the ground before he has made a full ſtep, whether in walking or trotting, of courſe he will trip and ſtrike the ſtones that lie in his way, and drive the looſe ones in every direction around him.

Horſes likewiſe ſtumble from debility or weakneſs; this may either proceed from a natural weakneſs of body, or from fatigue, or when overloaded by too heavy a rider in proportion to their ſtrength, or faintneſs from low diet or poor keeping; and I have frequently remarked of hearing more complaints of horſes ſtumbling about the end of autumn, than at any other ſeaſon of the year, which I have always attributed to the natural weakneſs which prevails in their bodies at that period, when they are moulting, and more eſpecially in thoſe horſes who are kept on low poor feeding, which adds to it.

CHAP. XVIII.

OBSERVATIONS

ON

TRIMMING HORSES EARS.

ANY obſervations on this head will be thought ſuperfluous and trifling by many people, who think this operation not only ornamental, but uſeful and even neceſſary to horſes. But as the plan I have adopted, which is to treat on whatever is hurtful or beneficial to horſes, I hope that will apologize for the obſervations I am about to make.

The ear of horſes, like other animals, are covered on the inſide with a ſhort down, intermixed with long hairs, which line the external cavity of the ear; the uſe of which ſeems deſigned by nature to prevent harſh ſounds from making too great an impreſſion upon the brain, and likewiſe to prevent the cold air, rain, duſt, flies, &c. from annoying the internal ear.

The means commonly uſed to remove this down, &c. is by the ſciſſars, the flame of a candle, or that of a burning torch. Both the latter are cruel and barbarous, and cauſe a deal of pain to the animal, not only from the bliſters that ſometimes riſe on the ears after this manner of ſinging them, but likewiſe from the means that are uſed to make horſes ſtand with patience to undergo the operation, that is a *twitch*[*] on the noſe; and perhaps if he is troubleſome to the operator, one put on the other ear.

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[*] An inſtrument that ſqueezes the noſe.

It is to be obſerved, that horſes are very much guided or directed by the ſenſe of hearing. This is obvious in thoſe that hear diſtinctly, (for many of them, particularly the fineſt kind, as they only are liable to this kind of treatment, have the ſenſe of hearing conſiderably blunted, if not rendered quite deaf from the above operation), from the motion of their ears, and the direction they give them to whatever quarter any ſounds come from, the attention they pay to what paſſes around them, or to what is ſpoke to them.

As this operation is generally firſt performed on young horſes at the time they are breaking, it is the more hurtful, as the uncommon ſounds, which are entirely new to them, and to which they are then more expoſed on the road or in ſtreets, muſt make the greater impreſſion on the ſenſe of hearing; ſuch as the rattling of carriages, drums, &c. and perhaps it may be owing to the above cauſe only that many horſes are timorous to approach, or to paſs carriages, and remain ſo ever afterwards.

Another diſadvantage which attends this operation upon the ears of horſes, is, that they will not go on chearfully, when travelling, in oppoſition to the wind, more eſpecially if it rains; for as the wind and rain gets free acceſs into the ears, they are continually ſhaking their heads and endeavouring to turn from it; and thoſe who are of a more impatient temper, will wheel ſuddenly round, in order to avoid what gives them ſo much uneaſineſs. They are then ſaid to be reſtive; the whip and ſpurs are applied by way of chaſtiſement for a ſuppoſed fault only.

For what has been ſaid, it will be obvious, that, from the conſtant practice of taking away the natural covering from the inſide of the ears, that the internal ear muſt be expoſed to be conſiderably injured, particularly from cold, duſt, &c. which blunts the ſenſe of hearing, and perhaps cauſes deafneſs; for it is obſerved in thoſe horſes who have been much uſed to this treatment, that they loſe that lively, active motion of the ears, and appear dull and inattentive to what paſſes around them, and even to the voice of their keeper.

What has been juſt now obſerved with reſpect to the trimming the inſide of horſes ears, may be applied to the practice of cropping, or rather cutting horſes ears, almoſt cloſe to the ſcull, as it produces the ſame effects on the ſenſe of hearing; beſides another diſadvantage attending it, which is the difficulty of keeping a collar or bridle on their heads.

CHAP. XIX.

OBSERVATIONS

ON

FRICTION, OR DRESSING HORSES.

I HAVE hitherto mentioned currying, dreſſing, and cleaning of horſes, in a curſory manner. In this place it will be proper to enlarge more fully on the advantages that ariſe from it.—As exerciſe acts as an aſſiſtant to the heart in promoting the circulation of the fluids, in like manner friction, on the ſurface of the body, by means of the curry comb and bruſh, contributes to forward the circulating fluids there, and promotes that inſenſible perſpiration through the pores of the ſkin, which is ſo conducive to the health of horſes.

The general intention of currying and bruſhing horſes that are kept in ſtables, it would appear, from the manner of performing it, is with a view only of taking away the duſt and dirt that may be collected on the hair. But, when conſidered in a more extenſive point of view, it will be found, when properly performed, to be a very beneficial operation to horſes, as they naturally perſpire much through the pores of the ſkin. When this operation is neglected, or ſlightly performed, the perſpirable matter hardens in the pores, it remains lodged at the roots of the hair, and has the appearance of a whitiſh or browniſh duſt, and ſometimes like ſmall ſcales, which, for the moſt part, creates an itching; the ſkin, at the ſame time, generally appears dry and hard, the hair ſtares or ſtands on end, (in place of lying ſmooth and ſhining), which always denotes a conſtriction of the pores of the ſkin.

Van Swieten, in his commentaries, obſerves on friction to the human body, "Which *," he ſays, "is in a manner the "alternate preſſure and relaxation of the "parts of the body, gentle friction preſſes "the veins only, whereas a ſtronger preſſes "alſo the arteries. By preſſing the veins, "it accelerates the motion of the venal "blood towards the heart; and, by this "means, the motion of the heart is quickened, and, of courſe, the blood is pro- "pelled with a greater velocity through "all the veſſels. The vital powers may be "increaſed therefore by friction to any de- "gree, without any foreign addition to "the body; for a burning fever may be "kindled by friction in the coldeſt hydro- "pical perſon. In thoſe bodies where "none of the viſcera deſtined to form the "chyle,

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* Vol. I. p. 67.

" chyle, diſcharge their office through a " ſtate of inactivity, the rubbing the abdo-" men with coarſe woolen cloths in a morn-" ing faſting, has wrought wonderful ef-" fects. And, for this reaſon, the ancients " ſet a high value upon frictions, both as " a preſervative of health, and ſerviceable " in the cure of many diſeaſes." The ſame author farther obſerves, that " if a " horſe be ſuffered to ſtand in the ſtable " without dreſſing, in a few days he will " become uſeleſs *; but, if his ſkin be " curried daily with an iron comb, and " rubbed with a bruſh, he will continue " active for many years." And, in page 376. he obſerves the great uſe of frictions in reſolving obſtructions: " I have ſeen," ſays he, " an indurated parotid gland, af-" ter many very good applications have " failed, reſolved by being well rubbed " with woollen cloths for an hour together, " twice a-day, after having been expoſed " to the vapour of warm water and vine-" gar.

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* He probably means unfit for active exerciſes.

" gar. The like alſo has been ſeen in the
" glands of the neck, when they have been
" ſtrumous."

Columella likewiſe obſerves, that " [*] the
" bodies of cattle ought to be rubbed down
" daily, as well as the bodies of men ; and
" oftentimes it does them more good to
" have their backs well rubbed down, than
" their bellies filled with large quantities of
" provender."

It was cuſtomary with the ancients to adviſe the uſe of baths and frictions, after long journeys, to the human body ; and this cuſtom ſtill prevails in Aſia.

From what has been obſerved on friction or rubbing to the human body, it will be evident how much benefit may be derived to horſes from good rubbing and dreſſing, as frequently as poſſible ; but more eſpecially when they are cold and chilly, after being over-heated, or from being ſuffered to ſtand in the cold air, tied at the ſtable-door; friction becomes then the more neceſſary, as it produces a gentle heat and warmth all over the ſurface of the body, and prevents ſtagnation of the fluids in the veſſels on the ſurface, and promotes a free perſpiration through the pores of the ſkin.

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[*] De Re Ruſtica, lib. vi. cap. 30. p. 597.

Notwithſtanding the great advantages that may be derived to horſes when in health by friction, or rubbing their bodies, yet there are caſes of diſeaſe in which it may prove hurtful on certain parts, as in ſwellings of the legs, attended with inflammation, where rubbing with the hands is frequently recommended, or when there is a diſcharge of ſharp ichorous matter from the pores, or in cracks in the heels, attended with great pain, or in wounds or punctures; as all theſe caſes are attended with more or leſs inflammation, friction then proves hurtful on theſe parts; as the heat there is already conſiderable, friction will add to it, and, of courſe, increaſe the diſorder; beſides, as the veſſels, in ſuch caſes, are too full and diſtended with blood, the force that is applied in rubbing the legs renders theſe veſſels liable to be ruptured.

Waſhing horſes with cold water, in order to clean them, by throwing whole pailfuls on their bodies when they are over-heated, immediately after poſting, &c. which, I am informed, is now become faſhionable on the poſt roads; and, it is ſaid, that no bad conſequences follow from it, of which I have great doubt. If they are well rubbed down immediately after ſuch exerciſes, there is no need for waſhing them with cold water, and then rubbing them afterwards, as the latter operation is ſufficient to clean them, without running any hazard of waſhing them with cold water, as cooling the body too ſuddenly always conſtringes and ſhuts up the cuticular pores, and prevents that perſpiration which is found ſo eſſentially neceſſary for promoting the health of men, and of thoſe animals who perſpire through the pores of the ſkin; and, it is probable, that the only thing that prevents immediate bad conſequences following from this manner of treatment, is, that ſuch horſes are very ſoon afterwards put to active exerciſes again by poſting, &c. by which the ſtrong perſpiration they are ſo ſoon put into carries off the bad conſequences that might have been expected from it; for not only daily experience, (the ſingle inſtance of the preſent practice above mentioned excepted) but the experience of paſt ages have demonſtrated the bad conſequences that commonly follow from the too ſudden application of cold, whether it be water or air, to the human or animal body, when over-heated; for, although the conſtitution of the animal body be ſuch, that at times it can withſtand many ſhocks, alterations, and irregularities, yet prudence points out the danger that may follow, and which ought at all times to be avoided. No doubt there may be exceptions to general rules, and, in this inſtance of waſhing horſes, it is not to be depended on, as too ſudden tranſitions cannot fail, in certain circumſtances, or habit of body, to produce ſome kind or degree of diſorder in the conſtitution, when diſeaſe will be the conſequence; inſtances of which will readily occur to every one, where both men and horſes have undergone very ſudden tranſitions from cold to heat, and from heat to cold, where ſome have eſcaped any bad conſequences from it, whilſt, at the ſame time, it has proved fatal to others; hence, therefore, it will be prudent to avoid the waſhing of horſes, when they are over-heated, with cold water, more eſpecially in cold chilly weather, as it anſwers no good purpoſe, and in which there is danger to be apprehended. For the ſame reaſon, waſhing the dirt off horſes legs, belly, and thighs, with cold water, immediately after they have performed a ſtage and have been over-heated, ſhould likewiſe be avoided till they are cool, well rubbed afterwards, and thoroughly dry; but which is very ſeldom put in practice.

CHAP. XX.

OBSERVATIONS

ON THE

MANAGEMENT OF HORSES WHEN TRAVELLING.

THE frequent applications that have been made to me for directions concerning the management of horſes, previous to, or when on a journey, induces me to give my readers a few ſhort obſervations on that ſubject.

It ought always to be remembered, that, when a horſe is intended for a journey of any length, and the proſpect of continuing it for ſome time, that he be properly prepared for it, by good feeding, and that he has been in the habitual practice of regular and daily exerciſe; for, without a due proportion of the latter, no horſe can be in a proper condition for travelling, or undergoing any fatigue, without danger of being laid up by ſome acute diſeaſe; for which reaſon, it will be obvious, that a horſe which is too fat, or full of fleſh, or that has been kept long on ſoft feeding, or newly from the hands of a dealer, or running late at graſs, or that has been accuſtomed to ſtand much at reſt in the ſtable, or thoſe that are too low of fleſh, and are wore out or exhauſted by former fatigue, from diſeaſe, or from old age, are unfit for this purpoſe; neither are too young horſes fit for a journey, eſpecially when about caſting their foal teeth, or before their ſtrength is confirmed, and their bodies ſeaſoned by the habit of labour or exerciſes. On the other hand, a horſe that is rather meagre than fat, and whoſe fleſh is firm from good feeding, and in the habitual practice of undergoing active exerciſes or labour, has always the beſt chance of performing a long journey with eaſe to himſelf, and with ſatisfaction to his owner.

For the eaſe of the horſe, and ſafety of the rider, it is proper to attend particularly to the ſaddle, that it fit the horſe's back properly, that is, it muſt neither be too wide in the trees, to come forward on the ſhoulder-blades, nor too narrow, ſo as to pinch and break off or bruiſe the ſkin; and that the bolſtering or ſtuffing in the pannel is adapted to the hollow ſpaces on each ſide of the ſpine or ridge of the back; that it lie ſmooth and equal on every part, the ſpine excepted, which it ought not to touch or come near in the leaſt, neither on the fore or back part. If it is thus properly fitted, there will be no occaſion for a crupper, unleſs it may be the choice of the rider. The rider muſt likewiſe take notice, when on the road, that the ſtuffing in the ſaddle pannel does not become too thin, which it will be apt to do, and, if needful, to have it repaired.

Before a horſe ſets out on a journey, it will be prudent to have him ſhoed ſome days beforehand, in caſe any accident ſhould happen by driving the nails too near, &c. There is another advantage attending this caution, which is, the ſhoes become firmer ſeated on the hoofs, and the clenches and nails ruſted, which contributes greatly to keep them firm in their place. If the horſe goes too near, ſo as to cut his legs, either before or behind, that muſt be provided againſt in the ſhoeing.

It is cuſtomary to water horſes in the morning, before they are fed; but it will be found of more advantage to water them after feeding, as it then more properly dilutes the food that is taken into the ſtomach; at the ſame time it waſhes the mouth and throat, and prevents or reſtrains the too ſudden return of thirſt or deſire for water,

ter, which occaſions an inclination in horſes of ſtopping at every rivulet that comes in their way on the road. But, as horſes that ſtand in a warm ſtable through the night, and, perhaps, feeding greedily on hay, are diſpoſed to drink too much water, when led to a watering trough, it will be proper to prevent them from drinking too much, by giving them water in a pail by meaſure; about half a pailful at once will be ſufficient. On their firſt ſetting out on the road, they ought not to be too ſuddenly hurried on, as the ſtomach and bowels are then too full; as this fulneſs goes off, they will naturally mend their paces of themſelves; towards the end of the ſtage, their motion may be reſtrained by degrees, and brought in as cool as poſſible; after they are thoroughly cool and well dreſſed, they ſhould then be fed and watered as above. The ſame rules may be obſerved at the end of every ſtage. At night, their legs below the knee, and the hoofs, may be waſhed with water, and well rubbed afterwards, till the legs are thoroughly dry, when they may be fed, and indulged with more water given them at once than they have had through the day. It ought always to be obſerved, that, when horſes come to the end of a ſtage, if they are very warm, that they be walked about gently till they cool gradually; and never to waſh their legs, or any part of their bodies, till they are cool. In hot weather, when the roads are dry and duſty, the waſhing of horſes legs proves very refreſhing; when the roads are dirty and wet, it is the readieſt method of cleaning them; but they ought always to be well rubbed afterwards.

It may be needful to remind young travellers, that they have their horſes ſhoes inſpected at every ſtage, and, whatever is amiſs about them, or the clenches of the nails, rectified; likewiſe to obſerve that the ſaddle has kept its proper place, in order to prevent its injuring the back, or coming forward on the ſhoulder-blades.

It frequently happens, that the ſkin of horſes, who have not been accuſtomed to perform long journeys, becomes ſcalded by the friction of the girths, and likewiſe on the under part of the breaſt, between the fore legs, where the ſkin is looſe and full of wrinkles; this proceeds entirely from neglect, in not cleaning the ſand and dirt from theſe parts, but ſuffering it to cloat among the hair, it collects in lumps, and, by the continued friction in the horſe's moving, it produces the above effect, which is attended with pain to the animal, and cauſes a contracted ſtep in his going; and when it is not taken notice of in proper time, the parts become inflamed and ſwelled, which proves a great hindrance to the horſe's travelling; when the hair is fretted off by the girths, they ſhould be waſhed clean from the ſand and dirt, and dried thoroughly before a fire, after the horſe is done up for the night; at the ſame time, it will be proper to cauſe the ſand and gravel to be picked out from below the ſhoes, and to waſh out the ſmaller particles of ſand that are apt to lodge there, as in weak hoofs it frequently occaſions lameneſs. One great advantage that ariſes to the hoofs from being frequently waſhed and moiſtened with water, eſpecially in dry warm weather, is, that it keeps them cool, a ſtate which is moſt natural to them, and which is much more beneficial than all the ſtopping and greaſing which at preſent is ſo much in uſe. But, as this ſimple proceſs of waſhing the hoofs with water only, diminiſhes the oſtler's fees, at the ſame time that it creates more labour and trouble, he ought by no means to be a ſufferer; the owner will, in the end, be a gainer by the exchange.

It is likewiſe proper to obſerve, that the ſaddle girths be not drawn too tight, eſpecially on the belly; if the fore or point girths on the breaſt be drawn tolerably tight, that will be ſufficient of itſelf, if the ſaddle fits properly, to keep it in its place. The girths on the belly, however tight they may be drawn, ſoon ſlacken as the bowels empty, and they only ſerve to give pain to the animal, by confining the viſcera, and occaſion a difficulty of breathing on the horſe's firſt ſetting out, when the belly is diſtended with food; beſides, in round barrelled or round bellied horſes, eſpecially if the belly is big, the back-girths, the tighter they are drawn, contribute to puſh the ſaddle forward on the ſhoulders, in ſpite of every means that can be deviſed to keep it in its proper place.

Road-horſes, on long ſtages, at any baiting place, about the middle of the ſtage, ſhould get a little oatmeal mixed in about half a pail of water, to refreſh them; this not only quenches their thirſt, by waſhing their mouths, &c. when the roads are duſty, but it invigorates them to perform the remainder of the ſtage; the oatmeal prevents any bad conſequences that might ariſe to them from giving cold water when they are heated, eſpecially in ſuch a ſmall quantity at once.

It frequently happens on bye-roads, or little frequented inns and baiting places, eſpecially towards the end of harveſt, that horſes are fed with green oats in the ſheaf, newly taken from the field, for want of other feeding; this is extremely hurtful to them, as it occaſions faintiſhneſs, &c. and frequently produces a diarrhoea or ſcouring, attended with great weakneſs. If poſſible, in ſuch ſituations, it would be prudent to get oatmeal for them, and mix it with a ſmall quantity of water, only as much as is ſufficient to moiſten the meal, ſo as to prevent it from blowing away by their breath in feeding: It would be the means of ſaving the life of many a good horſe, that otherwiſe falls a ſacrifice in ſuch caſes from this kind of green feeding. When the oats are too new and ſoftiſh, oatmeal ſhould always be got for them, if poſſible, in their ſtead, and given as above directed. Bread, of different kinds, is likewiſe a good ſubſtitute in place of new or bad grain, eſpecially the coarſe wheaten bread, formerly ſo much uſed to horſes, and known by the name of *horſe bread.* But, whatever kind can be got, if they will not eat it by itſelf, it may be rubbed down between the hands, or beat in a trough, and mixed with oatmeal, this will make very good feeding for horſes, and which moſt of them will eat. A little extra trouble and care, in ſuch caſes, ought not to be grudged for the benefit of ſo uſeful and valuable creatures, on ſuch emergencies.

Horſes on a journey, from the ſtrong perſpiration they undergo, and the conſtant feeding on dry food, are apt to become too coſtive, this ought to be guarded againſt, by giving them occaſionally a maſh of ſcalded bran, boiled barley, or malt, either by themſelves, or mixed in their oats, by way of a double feed. When a horſe ſhows an inclination to ſtale on the road, he ſhould always be allowed to ſtand ſtill for that purpoſe; and, if he has any difficulty in ſtaleing, an ounce of nitre may be given him in his food for a few nights following. It is of conſequence to attend to this diſcharge, and alſo that by ſtool, as inattention to either of theſe frequently proves the ſource of many diſorders.

Before I conclude this chapter on travelling, I would beg leave to prefer a petition in favour of the poor animal who is the ſubject of this treatiſe, and which is, the allowing him a little more time to perform the taſk required of him; 15 minutes more than what is allowed at preſent to perform a ſtage of as many miles, would ſave the lives of a number of horſes in Great Britain yearly, beſides the numbers that are lamed, and otherwiſe rendered uſeleſs by ſuch ſeverity.

As it is not foreign to the preſent ſubject, I ſhall here mention one obſervation on ſhoeing horſes, which had eſcaped me when treating on that head in my former publication.

When the roads, &c. are covered with ice, it becomes neceſſary to have the heels of the ſhoes turned up, and frequently ſharpened, in order to prevent horſes from ſlipping and falling. As this cannot be done without the frequent moving of the ſhoes, which breaks and deſtroys the cruſt of the hoofs where the nails are drove, to prevent this, I have always recommended to thoſe who were willing to be at the expence, to have ſteel points ſcrewed into the heels or quarters of each ſhoe, which might be taken out and put in occaſionally.

The method of doing this properly, is firſt to have the ſhoes fitted to the ſhape of the hoof, then to make a ſmall round hole in the extremity of each heel, or in the quarters, about three eighths of an inch in diameter, or more, in proportion to the breadth and ſize of the ſhoe; in each of theſe holes a ſcrew is to be made; the ſteel points are likewiſe to have a ſcrew on them, exactly fitted to that in the ſhoes. Care muſt be taken that the ſcrew on the points is no longer, when they are ſcrewed into the ſhoe, than the thickneſs of the latter. The ſteel points are to be made ſharp; they may either be made ſquare, triangular, or chiſſel pointed, as may be moſt agreeable; the height of the point above the ſhoe ſhould not exceed half an inch for a ſaddle horſe; they may be made higher for a draught horſe. The key or handle that is neceſſary to ſcrew them in and out occaſionally, is made in the ſhape of the capital letter T, and of a ſufficient ſize and ſtrength; at the bottom of the handle, a ſocket or cavity muſt be made, properly adapted to the ſhape of the ſteel point, and ſo deep as to receive the whole head of the point that is above the ſhoe. In order to prevent the ſcrew from breaking at the neck, it will be neceſſary to make it of a gradual taper; the ſame is likewiſe to be obſerved of the female ſcrew that receives it, that is, the hole muſt be wider on the upper part of the ſhoe than the under part; the ſharp points may be tempered or hardened, in order to prevent them from growing too ſoon blunt; but, when they become blunt, they may be ſharpened as at firſt. Theſe points ſhould be unſcrewed when the horſe is put into the ſtable, as the ſtones will do them more injury in a few minutes than a day's riding on ice. A draught horſe ſhould have one point on the toe of each ſhoe, as that gives him firmer footing in drawing on ice; but, for a ſaddle horſe, when they are put there, they are apt to make them trip and ſtumble.

When the ſhoes are provided with theſe points, a horſe will travel on ice with the greateſt ſecurity and ſteadineſs, much more ſo than on cauſeway or turnpike roads, as the weight of the horſe preſſes them down in the ice at every ſtep he makes.

FINIS.